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HYDRO NEWS

JANUARY, 1962





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CONTENTS THE YEAR IN REVIEW Commission changes ______ Over-all system growth _____ Hydro-electric progress _____ Thermal-electric progress On the Threshold of the Atom Spotlight on Sales Operation Reliance Incorporated _____ Only the handicapped need apply for employment at this unique enterprise. Whitby Puts its Best Foot Forward __ What to wear is no problem here. Catering in the Wilderness They eat well to work well at Little Long. Wire Now - Pay Later _____ This time-payment plan is aimed at relieving a load-building bottleneck. They Chose to Serve ____ An outstanding contribution to Hydro in Ontario by three municipal veterans. Along Hydro Lines _____ A pot-pourri of municipal news. Off-the-Wires ____ Editorial observations. ABOUT THIS MONTH'S COVER

PAGE

3

5

6

12

14

17

18

21

25

The cover speaks for itself this month—in no uncertain terms. And what it has to say is well worth perusing on the inside pages, for the year in review is the story of progress. Our annual report in easy-to-swallow capsule form commences on page two of this issue.

Editorial

BEHIND THE STATISTICS

At this time of the year we have come to expect a flood of figures and statistics from a variety of sources purporting to illustrate progress, or lack of it, in the 12-month period past. Year - end figures can make dull reading, but more often than not they have a tale to tell which quite transcends the cold presentation of facts. This is certainly true of Ontario Hydro's statistics, where almost every digit tells a story.

We are told, for example, that there was a 3.5 per cent increase in power demands during 1961. What remains unsaid?

Examined in the light of past performances, this increase must be regarded as modest. Demand rose by 8.1 per cent in 1959 and, while down last year, the long-term average is 6.5 per cent. Further, it reflects the state of the general economy, which is only now emerging from a period of recession and picked up strongly toward the end of the year. In turn, the business cycle provides a clue to the year ahead. If it

conforms to past patterns, it is reasonable to predict that growth in the demand for power will regain the long-term average in 1962.

Nor is it enough to say that Ontario Hydro's capital expenditures in 1961 amounted to \$125,800,000. Implicit here is the fact that Ontario Hydro exerts a stabilizing affect of some significance on the overall provincial economy. This enormous expenditure in a year of limited demand growth indicates how power facilities must be developed on a long-term basis, and without undue regard for minor fluctuations in the business cycle.

In 1961 the Commission borrowed 100 million dollars. Again much has been left unsaid. Delving deeper, we find that this was the lowest amount borrowed since 1955, and that it was achieved without curtailing vital expansion. The need for keeping a tight reign on borrowing becomes apparent when it is considered that 38.7 per cent of Ontario Hydro's total revenue is paid out in interest commitments.

One of the most significant trends is concealed in the year-end figures indicating that 606,000 kilowatts of capacity was added to the Ontario Hydro system during 1961. For the second consecutive year, then, new thermal-electric generation outstripped hydro-electric development. It is a pattern which will be the rule rather than the exception in the years ahead.

In its annual review, the Department of Northern Affairs and National Resources, Water Resources Branch, notes that the 661,075 kilowatts of thermal-electric capacity installed throughout Canada in 1961 accounted for some 75 per cent of the year's new elec-

tric generating capacity, and marked the first year in modern times that thermal-electric power gained the ascendency. The review notes, further, that "the benefits of integrated operation of systems containing both types of generating facilities are receiving recognition also, even in such provinces as Quebec and British Columbia, where many promising potential hydro-electric sites remain to be developed."

The emphasis was on diversified load-building during 1961. The Commission, in conjunction with the municipal utilities and its allies in the electrical industry, mounted a sales offensive unparalleled in its history. Sales efforts during the year increased consumption of electricity by many millions of kilowatt-hours.

Here, too, there is more than meets the eye, and some misunderstanding may exist as to why the Commission should spend money on promoting sales.

People outside the industry find it hard to understand that the kilowatt-hours mentioned above represent, for the most part, a highly selective load and one calculated to keep their energy bills to a minimum. They must be told that it is not economical to add plant and equipment primarily to meet peak demands, and that the present sales approach is designed to encourage a more diversified use of electricity for 24 hours of the day and 365 days of the year.

These are just a few of the implications inherent in the year-end figures. And the greatest story remains untold, for statistics say nothing of the people behind them. Without their loyalty, devotion and hard work, there would be little to review at the end of the year.







COMMISSION CHANGES

sponsibilities.

THE YEAR IN REVIEW

On the human side of Ontario Hydro's highlights of 1961 were three changes in the Commission itself—the body which directs the destiny of one of North America's largest electrical utilities.

W. Ross Strike, Q.C., perhaps better known in Ontario as "Mr. Hydro," took over the duties of Chairman last June, moving up from his previous position as First Vice-Chairman. Mr. Strike, a member of the Commission for 17 years and a member of the Bowmanville Public Utilities Commission for 29 years, has an intimate knowledge of the unique organization which constitutes Hydro in Ontario. He succeeded James S. Duncan, who retired last May.

THE NEW COMMISSIONERS

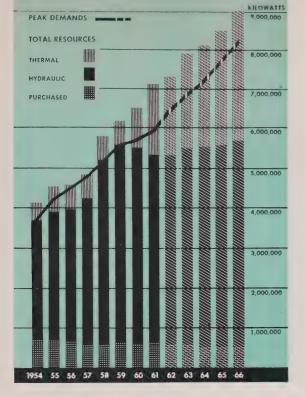
George Gathercole has been in the Ontario Government service for 17 years. He was born in Hamilton.

Mr. Gathercole, as well as being appointed to the Commission, has assumed the position of deputy minister of the new Department of Economics and Development, from which he is expected to withdraw as soon as possible to spend his full time as First Vice-Chairman of Ontario Hydro. (to page 24)

A new First Vice-Chairman was appointed late in the year. He is George Gathercole, 52, an economist in the Provincial Civil Service since 1945. Former Deputy Minister of Economics, he is now the Deputy Minister of Economics and Development. At Ontario Hydro he takes over the duties of First Vice-Chairman from Mr. Macaulay, who continues as a member of the Commission. Mr. Macaulay has accepted increased cabinet re-

Mr. Gathercole is no stranger to the Commission. Between 1939 and 1942 he served as an Economic Executive Assistant, gaining considerable knowledge of the responsibilities and organization of Ontario Hydro.

A young lawyer and Member of the Provincial Parliament moved into the position of Second Vice-Chairman. William Grenville Davis, 32, of Brampton, was appointed in December. A graduate of the University of Toronto and Osgoode Hall, Mr. Davis was called to the Bar in 1955. He was the youngest member of the Provincial Legislature at the time of his election, and he is Ontario Hydro's youngest vice-chairman.



OVER-ALL SYSTEM GROWTH

A preliminary look at total system growth in 1961 shows small gains were made in all areas. This was consistent with the economy, which is still climbing from a lower point in the economic cycle.

Demands were up 3.5 per cent compared with 3.4 per cent in 1960, and a long-term average of 6.5 per cent.

Because of the length of time it takes to construct new generating facilities, Ontario Hydro must maintain a sustained construction program regardless of temporary fluctuations in consumption. During 1961 the Commission installed 606,000 kilowatts of capacity. This came from two units at Otter Rapids, and one each at Richard L. Hearn, Lakeview, and Red Rock Falls. The Lakeview unit, with a capacity of 300,000 kilowatts, was still being tested at year's end.

Total resources at the year's end stood at more than 6,700,000 kilowatts. This left reserves at a satisfactory 13.2 per cent.

Ontario Hydro installed 207 miles of transmission line during the year to raise the total to 18,038 miles. Rural distribution line was increased by 430 miles to a total of 48,300 miles.

The number of customers in Ontario, served either directly or through the 354 associated municipal utilities, increased to 1,940,000 from 1,881,472, a gain of more than three per cent.

Capital expenditures amounted to \$125,800,000, and total assets, including investment in plant and equipment, rose to about \$2.8 billion.

The year's all-system peak load was 5,950,000 kilowatts, and occurred in December. In 1960 the peak load was 5,745,700 kilowatts. ■

THE YEAR IN REVIEW



Flooding commenced at Otter Rapids, left, last fall and, by year's end, two units were in operation. Construction at Little Long, below, is approaching the half way mark.



HYDRO-ELECTRIC PROGRESS

THE YEAR IN REVIEW

Spotlighting Ontario Hydro's 1961 construction story in the hydroelectric field was the booming pace of work on two rivers in the Northeast.

On the narrow, surging Abitibi, two units came on line at the Otter Rapids Generating Station, about 100 miles from James Bay. Two others are expected to go into service in the fall of 1963. Present capacity of this development is 86,000 kilowatts.

Forty-two miles northeast of Kapuskasing on the Mattagami River, a tributary of the Moose River flowing into James Bay, construction crews swarmed over the site of another hydraulic plant, at Little Long Rapids.

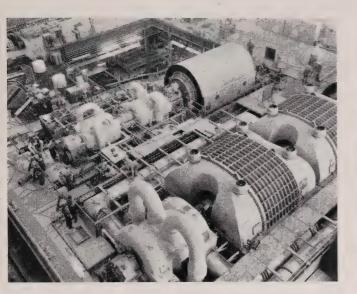
Development here is getting on toward the halfway mark. Half the river section of the main dam will be completed by this Spring. Work is well advanced on the tailrace channel, and crews are now pouring concrete in the powerhouse area. One of the two major earth dykes that will contain the headpond waters is nearing completion.

This station is one of three to be built on a 15-mile stretch of the swirling Mattagami by 1966. The other two—downstream from Little Long—are Harmon and Kipling. Construction schedules of the three plants overlap. Little Long's two units are scheduled for service in the fall of 1963.

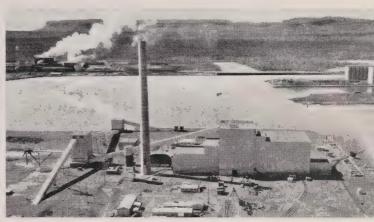
These three plants and Otter Rapids will funnel their power into an extra high voltage line, to operate first at 230,000 volts, later at 460,000 volts. Power will surge south through Timmins and Sudbury to Barrie, and eventually to Toronto.

The initial 30-mile section of this, the first major EHV line to operate at 460,000 volts in North America, is being built north from Timmins this winter.

Elsewhere in the Northeast, on the Mississagi River, the second of two units at Red Rock Falls was placed in service in January, 1961, to give the plant a capacity of 40,000 kilowatts.



Installation of the first 300,000-kilowatt unit was almost complete when photo, left, was taken at Lakeview G.S. Bird's eye view, below, is of Thunder Bay G.S.



THERMAL-ELECTRIC PROGRESS

Good progress was made during 1961 in Ontario Hydro's current expansion program in the field of coal-fired thermal-electric generation.

A highlight of the program was reached late in the year when the first unit of the Lakeview thermal-electric plant on Toronto's western outskirts delivered its first power. The 300,000 kilowatt unit, currently undergoing commissioning tests, is one of six that will ultimately supply 1,800,000 kilowatts.

Engineers and construction crews are now at work installing the second unit, scheduled for operation next summer. Work has also started on the third and fourth units which, together with the final two units, are expected to be producing power by the mid-sixties.

Thunder Bay Generating Station, the first conventional thermal plant built by Ontario Hydro outside Southern Ontario, is expected to produce energy early in 1962. The station is located in Fort William.

All work on station buildings and pressure tests on the boiler are finished. Installation of the turbine is virtually completed. Work on instrumentation in the control room is also close to completion.

Conventional thermal - electric capacity in Ontario by the end of 1961 totalled 1,373,600 kilowatts. In 1962, this capacity is expected to be 2,030,600 kilowatts, and by 1966, to have increased to 3,158,700 kilowatts.

Long-range forecasts indicate that, by 1970, thermal-electric capacity, both conventional and nuclear, will exceed hydro-electric resources in Ontario. Total capacity in 1970 from all sources has been estimated at nearly 12,000,000 kilowatts.

THE YEAR IN REVIEW



Sparkling waters of Lake Huron lap Douglas Point—site of Canada's first full-scale nuclear-electric project. Shell of reactor building is shown.

ON THE THRESHOLD OF THE ATOM

THE YEAR IN REVIEW

Featured by the structural completion of the 20,000-kilowatt Nuclear Power Demonstration Plant at Rolphton, Canada's 1961 nuclear-electric development program made notable headway.

Customers of Ontario Hydro will be the first in Canada to receive electricity derived from the atom when NPD starts feeding power into the Southern Ontario System later this year. To go "critical" in 1962, NPD is a joint undertaking of Atomic Energy of Canada Limited, Canadian General Electric Company, and Ontario Hydro.

Small in capacity, this project will help establish that Canada is on the right track in basing its nuclear-electric development program on the heavy water, natural uranium reactor.

At Douglas Point, where Ontario Hydro is the construction agent for Atomic Energy of Canada Limited, rapid progress is being made on a full-scale nuclear-electric plant.

The shell of the reactor building on this 2,300-acre site has been completed. This circular structure, 135 feet high and 130 feet in diameter, will house the reactor, eight boilers and associated equipment. Its perimeter wall is four feet thick, and it is roofed with a dome of 1/9" steel.

Scheduled for operation about 1965, the Douglas Point plant will have a capacity of 200,000 kilowatts from a single unit. A second unit is being contemplated at this site for construction at a later date.

An information centre established at Douglas Point, in June, provides some indication of the public interest which exists in this space-age method of power production. Some 40,000 visitors flocked to the centre for guided tours during weekends and summer holidays. So great was the response that the centre will remain open during the winter weekends.

If nuclear power proves competitive, as presently expected, Ontario Hydro estimates that the capacity of its nuclear-electric plants will about equal the capacity of its conventional coalburning stations by 1980. This means that roughly one third of its total resources, which are expected to be in the order of 22,000,000 kilowatts by that time, will be derived from the atom.

As the placard suggests, emphasis was on sales during 1961. W. R. Harmer, Ontario Hydro's director of Sales, outlined the program early in the year.



mated 4,000,000 kilowatt-hours per year to the load, beyond anticipated normal sales, through the sale of home freezers.

Early reports indicate that "sunshine Special," the electric dryer campaign launched in the fall, resulted in at least 15,000 sales. Together with the electric blankets distributed during the promotion period, this sales campaign added a new load of some 10,000,000 kilowatt-hours per year beyond normal increases.

Further market analyses indicated a good potential for supplementary electric heating installations, and a campaign was mapped out to commence January 29, 1962.

At the end of 1961, approximately 1,900 Ontario homes were

to the new fast-recovery water heaters. The new block, which supercedes the present flat rate service for new installations, comes into effect January 1, 1962.

By the end of November, 17,759 water heaters had been installed by Ontario Hydro's farm and residential customers, an increase of 3,249 over the same period in 1960.

Among the many developments on the farm front was the assembly of accurate data on up-to-date farm requirements, which resulted in approval of larger service entrance equipment to allow for greater use of electricity.

In the important field of commercial lighting, three municipalities were chosen for experimental "blitz" promotions. On request,

SPOTLIGHT ON SALES PROMOTION

Diversified load-building and sales were strongly stressed during 1961, with a variety of new projects and intensified activity in existing programs.

Emphasis was placed on obtaining support of manufacturers, distributors, dealers, contractors and the building trades. Hydro and its sales allies are benefiting jointly from this close-knit co-operation.

Results became strongly apparent during 1961.

To help municipal utilities and Ontario Hydro's regional and area organizations benefit from market analyses, a "feed-back" system was developed for disseminating vital research information. The results of surveys, studies and analyses are now relayed to the groups concerned to help them carry out the programs best suited to their own areas.

This is best illustrated by the specific appliance promotions, which were introduced in the province during 1961. Manufacturers, dealers, municipal utilities and Ontario Hydro co-operated in these concerted sales drives.

"Operation Eskimo," the first such promotion, added an estielectrically heated. This represented a total load of 24,000 kilowatts, established in less than three years.

Commercial and industrial electric heating installations totalling 16,856 kilowatts were added during the first 11 months of the year, bringing total load in this category to 29,126 kilowatts. Motels were the most numerous commercial users, and a special outdoor sign was developed to identify those establishments which have installed electric heating.

A wiring time-payment plan, effective January 1, 1962, was established for Ontario Hydro's residential and farm customers. Details will be made available to utilities wishing to adopt similar plans. Prime purpose of the plan is to help customers increase their use of electrical equipment by removing the bottleneck of inadequate wiring.

Continuing sales emphasis was placed by the municipal utilities and Ontario Hydro on the valuable water heating load. In the rural areas fresh sales stimulus was provided through the use of a "bonus block" of energy applicable

THE YEAR IN REVIEW

lighting specialists made on-thespot recommendations to improve lighting in commercial establishments. It is anticipated that this procedure will be continued and expanded in the year ahead.

Related fields in which Ontario Hydro was particularly active during the past year include the Medallion Home program, training sessions for Commission and utility sales personnel, plant power seminars, Hydro Showtime and exhibits at fairs and special shows throughout the province. The whole was supported by a vigorous advertising program.

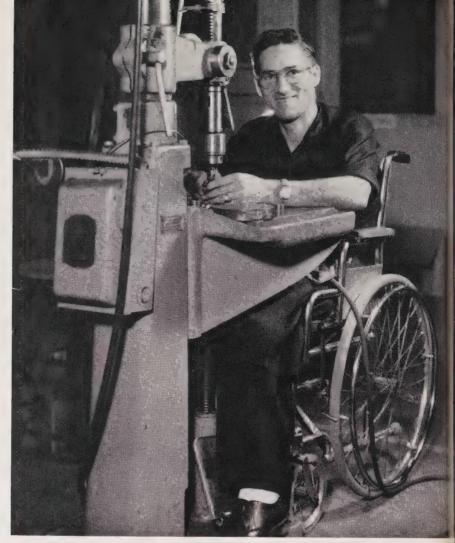


Wade Hampton

OPERATION RELIANCE

working and living with dignity

by Gordon Murphy



Drill press operator Leo Kelly, a paraplegic, is among the earliest employees of Operation Reliance Inc. Shown at work on a subcontract for Canadian General Electric, he is one of several wheelchair cases employed at the plant.

There appears at first glance to be nothing unusual about 63 Torbarrie Road in Downsview. The exterior is little different from that of scores of other medium-sized manufacturing plants in the Metropolitan Toronto area. But the resemblance begins to fade as the visitor approaches the entrance. There, he is greeted by a sign which is as startling at first as it is later to prove heart-warming—"Only the Physically Handicapped Need Apply."

The plant is the home of Operation Reliance Incorporated, an enterprise which, in a few short years, has established an international reputation for the exceilence of the products turned out by its handicapped workers. It has also become the nucleus of a movement in Ontario to free the handicapped from the unfortunate and widespread misunderstanding that equates disability with inability.

"We are pleading the cause by demonstrating the facts," says Wade Hampton, the tall, dynamic and personable president of Operation Reliance, who, in his zeal for the cause, ranges the length and breadth of Ontario urging the establishment of community workshops for the handicapped.

"All the disabled of your community need is the opportunity to prove themselves," he tells service clubs, church groups and other civic-minded organizations. And he cites the facts and figures behind the four-year rise of Operation Reliance from a shoestring operation with a total of two workers in a building with 5,000 square feet of floor space to the flourishing and self-supporting industry it is today. Present staff numbers more than 50, and there is three times the original floor space.

When Wade Hampton talks about the handicapped, he knows whereof he speaks. A former navigator who flew over Europe with the R.C.A.F. and the United States Air Force during the Second World War, and later an internationally-known skier, he is now "inconvenienced," as he puts it, by having to use crutches as the result of an attack of polio in 1953. Following two years of hospital treatment and rehabilitation, during which he did "a lot of thinking," he emerged with a changed sense of values.

"I became convinced that I had to do something constructive. This," he waved his hand to take in Operation Reliance's factory area "with a great deal of initial help, is the result. . . . Rather," he amended, "the beginning of the result."

The "beginning of the result" represents the production of screw products, stampings, electronic components, assembly and packaging equipment and other essentials of modern industry by men and women who might otherwise be languishing in undignified and hopeless dependence. They include polio victims, paraplegics, arthritics, epileptics, accident and shrapnel victims, to name but a few.

A Niagara punch press is run by a severelystricken polio victim. Two women who work on complex electronic assemblies are a paraplegic and another poliomyelitic. A 75 kva spot welder is operated by a high-leg amputee who was injured in a hunting accident. The turret lathe is run by a onearmed victim of another hunting accident,

And so on down the line. . . .

Operation Reliance got off to its inauspicious start in January, 1958, with funds provided by March of Dimes, following a survey by that organization on job opportunities in Ontario for unemployed and disabled people still capable of producing high-calibre industrial work. The survey pointed up the need for such a project as Operation Reliance, and the man selected to put the idea into action was the man who conducted the survey—Wade Hampton.

A board of directors was formed, with 50 per cent representation from the March of Dimes and the remainder representing various fields of commerce and industry. The March of Dimes advanced the money Operation Reliance may not recognize limitations, but it does have expansion problems and, at this writing, one of them involves electric power.

"We live by electricity," says Ron Stewart, general manager of the plant, another polio victim who, prior to joining Operation Reliance, was a product design engineer in an aircraft engine plant. "It's our lifeblood, and we have now reached the point where we need more power if we are to add more machines. We could use half again as much power, but we haven't the facilities to bring it in as yet. Further expansion means that we'll have to install a new transformer system to enable us to run additional heavy machinery."

Incidentally, should North York Hydro, of which the Operation Reliance plant is a customer, ever need a recommendation for excellence of service, it can always go to Mr. Stewart, who has the highest praise for the commission.

"They've been most helpful, and have done a terrific job for us by making surveys and assisting us in many ways with recommendations and suggestions which have proved invaluable to our operations. They've been just wonderful."

And that, from a man who sees nearwonders performed every day, is high tribute indeed.

to build the original plant and leased it to Operation Reliance with the option to buy. Government departments were then approached and provided on loan much of the original machinery. Operation Reliance then opened its doors, and, spurred on by a reminder from the Board of Directors that it must become self-supporting as soon as possible, went looking for business.

"It was tough at first," says Wade Hampton, recalling the early days when the announcement that he was looking for sub-contract engineering jobs to be performed by handicapped workers was greeted with everything from curiosity to outright disbelief. "Some got the message, though. And that was all we needed—a start."

From that start, a sales and growth record has evolved which any manufacturing enterprise might envy. Gross sales for 1959 jumped 170 per cent over the opening year; there was another increase of 25 per cent in 1960; and sales for 1961 are up 70 per





Disabled by polio, Arthur Gray, left, came to Operation Reliance without experience. He now does heliarc welding. Facing camera, top photo, is Jack Bainbridge, lead hand on plant's spotwelding team and a high-leg amputee. Two air cylinder attachments enable Ben Richter, right, to operate turret lathe with smooth efficiency.



ent over last year. Not bad for an industry whose application form demands disability, and to which 90 per cent of its employees come completely untrained!

This past year, Operation Reliance worked for 200 companies throughout Ontario on contracts requiring more than 1,000 different operations. Products for which component parts were produced range from automatic vending machines to aircraft engines. Output includes crutches of the plant's own renowned design, and barbecue grids, of which the plant produces about 70 per cent of the total manufactured in Canada.

"You'll notice," said President Hampton, "that we call ourselves Operation Reliance *Incorporated*—and not *Limited*. That was intentional. We"—again the wave of the hand to include all the plant—"refuse to concede any limitations."

Coming from anyone else, this could have sounded boastful: but here, it could only be interpreted as an expression of determined confidence—determination such as that displayed by a polio victim with badly wasted arms and shoulders who came to the plant looking for work and asked to be allowed to operate a turret lathe, a job calling for considerable manual dexterity and strength. Efforts to dissuade him failed, so he was allowed to have his own way.

As Mr. Hampton tells it, the man's attempts to master the machine were at first painful and tragic,

but, as the battle progressed, the end was inevitable. Today, with shoulder and arm muscles much improved, this same man controls the machine with little apparent effort and with the skill equal to that of any operator.

What this accomplishment—this proving of self—meant to this man, one of the many who have gone through such trials, would be difficult to put into words.

Operation Reliance is a non-profit organization, but the ever-alert Mr. Hampton is quick with the assurance that this doesn't mean that the company does not want to make profits. It does—so that it can plough them back into the business to which added equipment means more jobs and training for the handicapped. The jobs-and-training combination is important, and works somewhat in reverse of the general practice in that the job at Operation Reliance provides the training—training which equips the handicapped, if they wish, to move on to jobs in other industries.

The turnover at Operation Reliance is about 25 per cent, the average for any industry. But the management does not attempt to discourage it, since it regards any handicapped person added to the general industrial payroll as an endorsement of what Operation Reliance is seeking to prove to industry—that handicapped workers are not disabled workers,

but only workers with varying degrees of ability.

"If this is not acceptable, then why the prevalence of aptitude tests in the ranks of the nonhandicapped?" Wade Hampton asks.

"Our ultimate goal," he says, "is not to set up industries in which all workers are handicapped, but to have the handicapped accepted in all industries."

The prospect of having to install special equipment or modifications to accommodate the handicapped worker has, doubtless, frightened off many a potential employer. The experience of Operation Reliance has done much to discount this idea. It had not been economically possible in the early days to adapt all the plant's machines to what was then considered ideal use for their handicapped operators. So the operators adapted themselves to the machines—a procedure which immeasurably increased the work satisfaction of the operators, in that their accomplishments reflected their ability to meet competition on its own terms.

Ironically, in several cases where modifications were made, other plants found that the changes benefited their own non-handicapped operators, and adopted them.

Operation Reliance pays salaries competitive with industry generally, and the total of almost a quarter of a million dollars that has gone into pay cheques in the past four years compares most favorably with some \$173,000 which these people would have collected in welfare allowances for the same period. The savings to the harassed taxpayer can be measured, but there's no way of computing what these pay envelopes represented in terms of satisfaction and dignity.

Work is therapy in the language of the handicapped—and this, doubtless, accounts for the fact that absenteeism is non-existent at Operation Reliance. Surveys bear this out throughout industry where the handicapped worker is concerned. The desire to achieve excellence is another characteristic; for, having won equality by disproving disability, it would appear that the determination to compete is followed by an equally driving desire to exceed.

Now that word of Operation Reliance is getting around, Mr. Hampton finds himself dealing with enquiries from many parts of the continent concerning the establishment of similar plants. All such enquiries are dealt with in detail; and the information is always accompanied by a warning which is the distillation of hard experience: the problems of starting and running this kind of an organization must be dealt with realistically.

In Mr. Hampton's words: "Such a company can only be set up by ardent and able people, capable of creating community acceptance and co-operation. It requires capital, courage, and perseverance. . . ."

With the latter two requirements, Operation Reliance is richly endowed.



Before Operation Reliance was organized to help open the eyes of industry to the potential of physically handicapped workers, they were very much on their own.

Ernie Edwards, a fork-lift operator at Ontario Hydro's A. W. Manby Service Centre, can vouch for that.

When he was nine years old, Ernie grabbed at some high voltage lines to save himself from falling off a roof. Both arms were burned so badly they had to be amputated to the elbows. A few years later Ernie was fitted with a pair of artificial arms with hooks for hands.

"I started looking for a job when I left school," Ernie says, "and nobody wanted to give me a chance to prove myself. Finally I was hired by Ontario Hydro's Printing Department as a messenger in 1949."

A few months later Ernie started operating a standard fork-lift truck—which he mastered in short order, and without any special considerations for his handicap. Today he is one of the more skilled among the competent drivers at the Service Centre.

Although Ernie made the grade on his own, he is very much aware of the value of a venture like Operation Reliance.

"They've needed something like Operation Reliance for a long time," he says. "It's doing a lot of good for a lot of people."

Whitby puts its best foot forward

by Olga Ferda



This trio of Whitby P.U.C. personnel is proud of its trim looks. Lineman Ray Campbell, left, confers with Meterman Harold Waters and Clerk Mrs. Fern Proctor. Smart blue uniforms solved girls' problem of what to wear.

This aggressive utility has adopted the uniform approach.

Civic pride is running high these days in the modern and progressive town of Whitby. And part of the credit must go to the Public Utilities Commission, whose recently renovated headquarters would be an asset to any community.

Although the exterior walls remain untouched, the office area has been increased to about four times previous size in incorporating space previously occupied by a warehouse, garage and display windows.

That section of the spacious office that greets the customers features a handsome grilled railing, partial glass walls, an open counter, and recessed fluorescent lighting. A single green wall provides a pleasing contrast to the general color scheme which highlights a palate of brown tones, accented by touches of beige, orange and yellow.

The most striking transformation occurred in what used to be the garage. It is now a handsome boardroom with birch panelling, full-length draperies, wall-to-wall broadloom, and an acoustic-tiled ceiling.

While renovation was under way, the P.U.C. set up temporary offices in an old house behind the main structure. Harry Simpson, secretary and general manager, recalls:

"The cash office was in the parlor, billing was done in the bedroom, the general office was in the dining room, and I worked out of the kitchen."

Not the least of the recent P.U.C. changes involves the appearance of the female staff. Chatting at coffee recently, the girls came up with the idea of wearing identical uniforms to the office. Growing more enthusiastic as the discussion progressed, the girls took their proposal to management, and soon were proceeding with the agreeable task of designing their outfits

Now the girls wear a winter uniform consisting of a navy blue wool flannel suit with the fashionable shorter sleeve and a white v-neck blouse. Their summer outfit features a royal blue skirt and wesket with a white blouse. The P.U.C. added the final touch by presenting all five girls with a utility crest.

Asked why they had decided to wear uniforms for which they paid themselves, Mrs. Gertrude Lynde, chief clerk, said:

"We all felt it would look smart to be dressed alike, and, besides, its more economical, since we don't have to buy a large assortment of clothes suitable for the office. And it solves the daily headache of what to wear."

But the ladies are not the only uniformed members of the Whitby P.U.C. staff. In fact, the metermen were first with their own distinctive outfits.

"It serves as identification," explains meterman Harold Waters. "When we arrive at a customer's home, we find we are admitted more readily because the customer has no difficulty in identifying us."

His winter uniform is made up of dark blue trousers, zippered tunic, matching top coat, cap and black tie.

Whitby linemen also present a smart, uniform



Photos, left and right, indicate how Whitby utility headquarters have been renovated, inside and out. Group in lower photo had a reputation for getting things done. From the left are: W. S. Martin, mayor; Harry Simpson, secretary - manager; Oscar Moore, 1961 chairman; and Engineer H. L. Pringle, who has recently retired. New chairman is Albert Randall.



appearance with their denim jackets, cover-alls and safety hats.

Customers entering or phoning the office are invariably greeted with courtesy and enjoy efficient service. As one lady put it: "I like coming in because I know I'll receive both a 'how-do-you-do' and a 'thank you' as well as excellent service. It gives me a lift, because this kind of treatment is all too rare these days."

All five girls have been thoroughly trained in the complete office routine so that, in an emergency, one can do the other's work. The two front office clerks have their own cash drawers. This helped to eliminate long line-ups which sometimes occurred during rush periods when there was only one cashier.

"We find this system works very well," says Mrs. Lynde. "In fact, we've made provision for additional cash drawers as our customers increase."

A willingness to try out new ideas and procedures characterizes the progressive outlook of the Whitby utility. A case in point is the accounting department's decision to eliminate the accounts payable ledger. Considerable time is saved by paying all accounts from the invoices at the end of the month, and then entering them directly into the cash dispersement journal. Accountant Rex Hopkins says:

"We find this system practical for our size of operation, but it may not work as well for a larger one."

Another advancement was the introduction of a



two-way radio system by which the office can now reach Line Foreman David McKeag within seconds in case of emergency, or save money by conveying routine instructions. Of the seven vehicles operated by the utility, three are radio-equipped and can be contacted by the base station at the service centre.

Whitby P.U.C. traces its ancestry to 1903, when the Whitby Water and Light Commission was formed. This commission derived its electric power from its own steam plant until 1912, when it began purchasing power from the private Electric Power Company. Ontario Hydro acquired the assets of this company in 1916, and Whitby became a fixed rate Hydro municipality. The present name was adopted at that time, and in 1926 Whitby became a cost-contract municipality.

The town has experienced vigorous growth since its affiliation with the Hydro system. A striking example is the increase in load from 162 kilowatts in 1916 to 11,476 kilowatts in 1960.

In the last five years alone, Whitby P.U.C. has revamped the entire distribution system, increased the number of customers served by 48 per cent, and acquired two new sub-stations. In co-operation with the Town Council, it has also expanded the street lighting program and installed the latest mercury vapor lamps throughout the residential areas.

And progress is continuing. Under the Winter Works Program, the utility is having the old house behind the office building torn down to make way for a parking lot. A new warehouse is under construction at the service centre, some two blocks removed, and when this is complete the present warehouse will be converted to a garage. By taking advantage of the Winter Works Program, the utility expects to carry out this work at a saving on the order of \$10,000.

CATERING IN THE WILDERNESS



At peak periods Little Long cafeteria is filled with project workers. There is accommodation for 480 at one sitting, allowing 15 square feet per person. More than 900 hungry men can be fed in less than an hour.

Condensed from an article in Canadian Food Journal

Deep in the dense brushland of northern Ontario, 42 miles north of Kapuskasing, more than 1,100 latter day pioneers are hard at work harnessing the power potential of the Mattagami River, one of several turbulent waterways flowing into James Bay. The site of the project is the Mattagami's Little Long Rapids, and if that name sounds contradictory, it is no more unusual than the fact that within easy walking distance of the growling earthmovers and straining trucks, and within earshot of the rapids, stands one of the most modern cafeterias to be found anywhere on the continent.

The Little Long cafeteria is the most recent of several built and maintained by Ontario Hydro at its construction sites during its vast post-war expansion program.

A sparkling blend of comfort and utility, the Little Long cafeteria has, on the surface, little but geography and an invitation to distinguish it from similar eating places in downtown Toronto, 460 miles to the south. That it isn't Toronto could be confirmed by a glance out a window; and if the scenic evidence isn't enough, there's the very distinguishing invitation extended by large signs above each of the cafeteria's well-laden service tables — "If you want more of anything, it's yours for the asking." "Ontario Hydro officials have always recognized and accepted the common sense theory that a well-housed and well-fed workman is a contented and efficient workman," says W. E. Bert LeClaire, whose title as Hydro's Construction Services Head makes him responsible for the Commission's internationally acclaimed catering department.

Ontario Hydro learned, at an early date, from experiments in time study, that man-hour costs are lower and efficiency rates much higher on work performed by men housed and fed by employers at rates below the actual cost. "We also know," says Mr. LeClaire, "that man-hour costs and efficiency ratings vary in ratio to the degree of quality of accommodation and food."

The Little Long townsite, with its six-room school, a supermarket second to none in Canada, its office building, its rows of neat houses for married employees and staff quarters for single employees, its huge recreation hall and facilities for worship—Little Long, while just recently carved out of the wilderness, has most of the amenities of any modern Canadian community.

Building roads, clearing brush and constructing dykes, dams and generating stations requires energy. Energy calls for good food—and plenty of it.

"I am not a dietitian in the medical sense of the word," says Bert LeClaire, "and I am not in the position to discuss energy expenditure in terms of calories, but I know that construction workers require and consume 6.63 lbs. of food per man per day to maintain maximum efficiency. Multiply that by the

Soup's on—and so are a lot of other good things at Little Long cafeteria. Signs say "If you want more of anything it's yours for the asking." Construction men take them literally, each consuming 6.63 pounds of food per day.



900 we are presently feeding at Little Long, and we arrive at a figure of almost 6,000 lbs. of food purchased, processed and consumed in the cafeteria every day, in addition to hundreds of gallons of soup, milk, tea and coffee."

The present cafeteria at Little Long—a fully-equipped double-line operation—served its first meal on November 13, 1960. Since then, more than 850,000 meals have been served. According to manager Paul de Fulvio, some 4,000,000 more meals will have been served before the completion of the power project late in 1963.

In this wilderness oasis 900 hungry men can be fed in less than an hour. There are generous pantries and cooking areas equipped with stainless steel and aluminum. The modern food preparation building has fully equipped butcher shop, storage rooms, vegetable preparation room and bakeshop.

A typical day's production at the bakeshop adds up to 1,000 loaves of 24-oz. assorted bread, 150 dozen

Parker House rolls, 175 covered pies, 12 slab cakes and 100 dozen eclairs.

Among other things, 8,000 lbs. of meat and dairy products are required weekly at the Little Long cafeteria. In ordering supplies to fit menus which are drawn up four weeks in advance, Mr. de Fulvio tries to allow for some of the particular tastes represented by the more than 20 different nationalities working on the project.

"The Italians are traditionally fond of macaroni dishes and oil dressings. The Finns like sugar and sweet pastries and coffee. The Russians and Poles are heavy meat eaters, and our own French-Canadians 'go to town' on items such as pea soup, pancakes, pork and beans, and any kind of pie."

Differences in job conditions are also taken into account in the preparation of menus.

"The office worker and the tunnel driller working in dynamite fumes and fine rock dust may not have the appetites of their fellow workmen who are out in



Economies are never effected at the expense of quality, but a close eye is kept on costs. Camp manager Paul de Fulvio is shown, top, examining No. 3 brand hind beef. Little Long baker, below, shows off his wares. A typical day's output is 175 pies, 1,000 loaves of bread—rolls, cake, eclairs.



the open air, but all must be provided with ample quantities of tasty food in great variety, including plenty of fresh fruit and salads. Each man must be fed and each satisfied."

Each man must be fed and each satisfied . . . about sums up the reason for Ontario Hydro's catering department and, doubtless, accounts for its cafeterias being regarded as models of their kind. They have been studied and emulated by some of the world's largest construction and utility enterprises.

"The quality of food brought in is the same for all camps, big and small," says Bert LeClaire. "No expense or effort is spared to obtain and install the latest labor-saving hotel and restaurant equipment and machinery to assist our staff in serving better meals."

Salads and cold plate dishes are freshly prepared and served from refrigerated counters at Little Long, as in all Ontario Hydro cafeterias, and hot food is maintained at a temperature of about 140 degrees, and served from steam tables on preheated dishes.

Economies are never adopted at the expense of the quality and quantity of food, however, but every effort is made to eliminate waste and unnecessary labor costs. What Hydro's catering department means by economy has been illustrated at the Little Long cafeteria by the purchase of two 100-gallon refrigerated milk storage vats.

Says Paul de Fulvio: "Since 900 glasses had to be filled with milk at each meal, along with countless pitchers, it became obvious that some male help would be required to supply the cafeteria waitresses with cans of milk weighing 80 lbs. each. The vats were purchased instead. They will pay for themselves in seven months."

One of the really big economies effected has been in the purchase of beef. According to Ontario Hydro's catering department, experiments performed in the Commission's butcher shops have shown "beyond a doubt that a saving of 10% to 12% is obtained by purchasing No. 3 steer hinds, rather than blue or red brand hind." And there is no sacrifice of quality.

Needless to say, No. 3 brand hind is now used exclusively in all their catering operations; and if there is any discernible difference between it and other brands, it wasn't in evidence on a recent evening at Little Long, when grilled steak was on the menu. The Commission slogan, "If you want more, it's yours for the asking" was being taken literally—and with gusto.

The cafeteria at Little Long is a catering operation hailed by many as the finest of its kind in existence. But the restless, searching Mr. LeClaire is still not completely satisfied. He wants perfection.

"And after you achieve that, what then?" he was asked. The answer was as succinct as it was characteristic. "Something better."

WIRE NOW-

Ontario Hydro offers its farm and residential customers a time-payment plan for wiring improvements.

PAY LATER

O NTARIO Hydro is taking a close look at all of its cards in a concerted effort to increase and diversify

consumption.

Particular attention has been devoted lately to one vital area where deficiencies can nullify the strongest sales effort. That is home and farm wiring. No amount of selling will install load-building appliances and equipment on premises where the use of electricity is limited by two wire services, inadequate service entrance equipment, lack of circuits and outlets or antiquated wiring.

And there is evidence to suggest that this type of deficiency is a limiting factor of some consequence. Faced with the additional cost of wiring improvements, a potential customer may well decide to defer purchase of a major electrical appliance, or turn to another source of energy where additional installation costs would not be a factor.

It was against this background that Ontario Hydro decided to institute a time-payment plan whereby its residential and farm customers could re-wire or install new wiring on a time payment basis. Effective date of the plan is January 1, 1962.

Key figure in the convenient, one-stop finance plan is the electrical contractor who completes all arrangements with the customer. He provides the customer with a firm price covering the total cost of the work and secures a down payment of not less than 10 per cent. He confirms details of a wiring agreement with the customer and arranges for a promissory note for the unpaid balance. When notified that the customer's credit has been approved by Ontario Hydro, he proceeds with the installation.

The electrical contractor receives full payment of the outstanding balance from Ontario Hydro after furnishing proof of customer satisfaction and certificate of inspection. Agreement forms and deferred payment schedules are supplied by Ontario Hydro.

Under the conditions of the plan, customers may arrange terms up to a maximum of 36 months. The minimum monthly payment permissible under the plan is five dollars, and the outstanding balance may not exceed \$500. Carrying charges are 6 per cent per annum, calculated on the original amount financed.

Separate monthly invoices will be rendered to (Continued on page 20)

Permanently-installed supplementary electric heating will be promoted across Ontario from January 29 to March 10 in a campaign conducted by electrical contractors, municipal electric utilities, manufacturers, distributors and Ontario Hydro.

With the theme "Make Your Home Complete With Electric Heat," the province-wide campaign will be tied in with government-sponsored "do it now" winter works programs.

Campaign advertising will direct the public to electrical contractors. Up-to-date listings of electric heating contractors have been supplied to all municipal utility and Ontario Hydro offices.

Advantages of supplementary electric heating will be emphasized in newspaper, radio, television, display, bus, car and truck card advertising by all participating groups. A billing stuffer featuring electric heating in conjunction with winter work programs has been provided by the National Employment Service for inclusion with Ontario Hydro's regular rural billing.

Included in the same billing is an Ontario Hydro insert featuring built-in electric heating and announcing the Commission's new time-payment plan for wiring and supplementary electric heating. A special billing insert on supplementary heating has been made available to the municipal utilities.

A number of prizes will be offered to contractors in each Ontario Hydro region to stimulate contractor participation.

An estimated 90 per cent of Ontario homes have a heating problem, such as a cold bathroom or attic, a recreation room or an addition which could be solved by electric heating. A total of 15,000 installations has been set as a realistic campaign goal.

JANUARY, 1962

THEY CHOSE TO SERVE

Change is the essence of progress,

but Hydro is the loser

as this trio of municipal veterans retires. . . .



Dr. Metcalfe was first commissioner to receive O.M.E.A. long-service award. W. Ross Strike makes presentation.

DR. A. A. METCALFE

There is no doubt that Dr. Albert Metcalfe holds the record for civic service in his own home town of Almonte. And, what's more, there are few people in Canada who can beat his 60-year stint in municipal office.

That is why his fellow-townsmen were so startled recently when the 93-year-old physician announced his decision to retire from Almonte P.U.C. on which he has served, with the exception of four years, since 1901.

In fact it was his fight to achieve public ownership of the town's electrical distribution system which led Dr. Metcalfe to run for public office. In 1901 he gained a seat on the town council, and subsequently served as the community's chief magistrate for seven terms. During this time, the town streets were paved, and Dr. Metcalfe won a court battle to provide a high school building for the municipality.

This civic-minded medico, who

was a champion pole vaulter and a member of Queen's University rugby team in 1893, manifested his keen interest in sports by including a gymnasium in the plans for the high school building. A familiar figure in racing circles for many years, he consistantly won red ribbons with his sulky entries at Ottawa's Central and Toronto's Canadian National Exhibitions.

His parents called him Albert in recognition of the fact that Queen Victoria's consort, Prince Albert, stopped for a drink of water at their farm shortly before Dr. Metcalfe was born on November 3, 1869.

He taught school for two years after leaving Almonte High School before he went on to Queen's University, where he graduated with honors in medicine. Following post graduate study at the Mayo Clinic, Rochester, Minn., the young doctor returned to Almonte to establish the practice in which he is still active.

In the interim he has delivered some 3,000 babies, and he can recall performing appendix operations in farm kitchens with the aid of flashlights.

His lengthy association with Almonte P.U.C. won recognition for him in 1954 when the O.M.E.A. inaugurated its long-service awards. Naturally enough, Dr. Metcalfe was the first municipal Hydro commissioner to receive a scroll.

Although he is retiring from active political life, Dr. Metcalfe

is still firmly convinced that his long-espoused plan to regulate the flow of the Mississippi River from Almonte on a 24-hour basis for the benefit of his home town and neighboring communities will eventually come to fruition.



Milton Elliot pays tribute to fellow commissioner W. Ross Strike on his appointment as Ontario Hydro Chairman.

MILTON JOHN ELLIOTT

What prompts a man to spend much of his life in public service?

Take Milton John Elliott, 77, of Bowmanville, for example. Mr. Elliott retired last month after 23 consecutive years as a Bowmanville Public Utilities commissioner. Before that he served for 10 years on the Bowmanville Town Council, three of them as mayor.

He is a past president of District One, O.M.E.A., and is an Honorary Vice-President of the District association.

Like his Bowmanville P.U.C. contemporary, Ontario Hydro Chairman W. Ross Strike, Mr. Elliott has helped nurture Ontario's great public power entity for a quarter of a century, and has watched it grow and flourish.

And today, so far as his career as a public servant is concerned, Mr. Elliott holds that: "If I had it to do over again, I wouldn't change a thing."

Earlier this month, Mr. Elliott reminisced a bit with George T. VanBridger, Bowmanville P.U.C. manager. Officially retired, Mr. Elliott had dropped into the Bowmanville office to "finish up a few details."

A sturdy, quiet-spoken man who has the glow of good health about him, Mr. Elliott recalled that he first came to the Bowmanville utility as a commissioner in February, 1939. Uncertain then that he would enjoy the challenge, he had been persuaded, by W. Ross Strike, among others, to accept the vacancy created by the death of an elected commissioner.

At the next election, Mr. Elliott headed the polls in being re-elected to the Commission. "It turned out," Mr. Elliott recalls, "to have been a 23-year engagement."

Bowmanville P.U.C. came into being in 1932. Mr. Elliott, who served as Mayor of Bowmanville in 1929, 1930 and 1931, was one of the champions of public power.

The private utility which had served Bowmanville for a period prior to this was, in Mr. Elliott's own words, "doing a good job for Bowmanville." But Mr. Elliott, together with other civic leaders, felt the town would benefit by joining the Hydro family.

"Time has proved the decision was a good one," he says, and Bowmanville P.U.C.'s rates today—among the lowest in the province—and its record of service, prove the validity of Mr. Elliott's statement.

Has the town and its utility grown since Mr. Elliott first joined the Commission? Mr. VanBridger says the utility's load in 1937 was about 1,500 kilowatts. Today it is

7,000, or more than four times larger.

Mr. Elliott was born in neighboring Clark Township in 1884, and moved to Bowmanville 59 years ago, where he operated a highly-successful fruit farm for almost half a century. He married Adele Osborne, a Bowmanville girl, in 1914.

Mr. Elliott, who admits he has never missed the Royal Winter Fair, maintains a stout interest in show horses although he no longer has his fine stable of hackneys and roadsters. Today, though, he uses a car "for getting around," and he and Mrs. Elliott plan to do lots of travelling in the days ahead.

George VanBridger admits that Mr. Elliott will be missed by the P.U.C. But delegates to this spring's annual convention of the O.M.E.A.-A.M.E.U. probably won't miss him.

Mr. Elliott thought he just might drop in at the 1962 convention. "They're a fine group," he says, "and I think I'd miss them more than they'd miss me."



Retiring after 38 years' service with Galt P.U.C., Harvey Hawke, left, receives gift from Chairman A. T. Brown.

HARVEY HAWKE

"I've always been a bit of a rebel!"

Those are the words Harvey Hawke used to sum up his halfcentury of public service in the City of Galt during a recent interview with Ontario Hydro News.

Retiring after 38 years continuous association with Galt P.U.C., Mr. Hawke looks proudly back to

the year 1913, when he was first elected a town councillor and fought a successful campaign to install a civic water system.

Now in his 81st year, the veteran utility commissioner is the last of a family of 10 children. Born at Hawkesville, a small community 15 miles north of Waterloo, Ont., which was named in honor of his grandfather, Gabriel Hawke, he moved with his family to Galt when their homestead burned to the ground, and he has made his home in that city ever since.

He smilingly recalls the halcyon days of a half-century ago when he was an ace salesman for the Mutual Life Insurance Company. For 19 consecutive years he was one of the six top company representatives in Canada, writing policies with a value ranging from \$100,000 to \$250,000 a year.

His business activities still gave him time to pursue his unquenchable interest in civic affairs. After his stint on Galt's town council, he served on the local school board. Then, in 1923, he was elected to Galt P.U.C., and that marked a step in his career which was to make him one of the best known Hydro personalities in the province.

Early in his association with the Galt Commission, he sponsored a motion which was presented to Ontario Hydro's first Chairman, Sir Adam Beck, requesting that the power potential of the St. Lawrence River be developed for the benefit of the people of Ontario.

Since that time he has enthusiastically espoused many projects which have won him warm acclaim in O.M.E.A. circles.

He was one of the champions of the mutual public utility insurance policy in which all utilities now share, as well as the co-operative Municipal Hydro-Electric Pension and Insurance Plan, which is available to municipal Hydro

(Continued on page 20)

commissions. In more recent years, he has waged a dogged but still unsuccessful fight to impress upon fellow members of the O.M.E.A. that they should all carry municipal electrical insurance on a co-operative basis.

On nine different occasions since 1923 he has served as Chairman of Galt P.U.C. At the final 1961 meeting of that body last December, his fellow-commissioners warmly commended his lengthy and untiring service. Chairman A. T. Brown, in presenting a wrist watch to Mr. Hawke on their behalf, recalled that assets of the Galt utility's Hydro Department had increased from about \$935,000 in 1923 to some \$4.8 million in 1960.

"The only thing which hasn't increased in this period is the financial debt of the Department," Mr. Brown pointed out. "In 1923, they had an overdraft of more than S81 thousand. Today there is no overdraft, we have \$90,000 in bonds in the bank. And you have to give credit to Harvey Hawke

and the men who have served on this utility in the past 40 years."

Despite his keen business acumen, Harvey Hawke is also a sentimentalist. This was clearly evident when his voice broke during a brief reply to the tribute from his fellow-commissioners at the presentation ceremony.

His sensitivity was also manifested as he recalled his former interest in hunting and fishing. "About 20 years ago I shot a young doe, but I didn't kill her. As I approached, she looked up at me, and I'll never forget my feelings when I had to put her out of her misery. I've never had the heart to shoot or harm a living thing since that day."

Retirement for Harvey Hawke is something of a misnomer. As he sat in his apartment overlooking the Grand River, he was enthusiastically discussing plans to drive to Florida for the winter months, while he proudly displayed his collection of conche shells from previous visits to the Southern

States and the Virgin Islands.

Although unswerving in his devotion to Galt, Mr. Hawke has been an inveterate traveller. For several years he operated a 10-acre grapefruit orchard near Brownsville, Texas, on the Rio Grande River, and made semi-annual visits to his plantation to supervise the harvesting operations. This venture came to an end 10 years ago when a severe frost killed every tree in the 700-tree orchard.

Ill-health has forced Mr. Hawke's retirement from active service on the Galt utility, but it hasn't dampened his enthusiasm for the Hydro cause. He admitted, under questioning, that March 5-6-7, 1962, would likely find him registered at Toronto's Royal York Hotel for the annual O.M.E.A.-A.M.E.U. Convention.

This continuing interest in public service was manifested by a remark made by the sprightly nonagenarian in concluding the interview: "If we haven't lived to make life more pleasant and better for those who follow us, then our life has been lived in vain."

WIRE NOW—PAY LATER (Continued from page 17)

avoid including the installments with the customer's regular energy bill.

Wiring eligible for financing under the new plan includes a wide range of work, such as installations of circuits for major electrical equipment and appliances, rebuilding and increasing the capacity of service entrance conductors and equipment, improvements and additions in the wiring of farm buildings and other general residential wiring.

Although the plan does not include major appliances and equipment, for which alternate financing is available, a special application of the plan covers permanently installed supplementary heating equipment and associated wiring. The plan should be particularly effective as a sales incentive during the province-wide supplementary electric heating promotion outlined elsewhere on these pages.

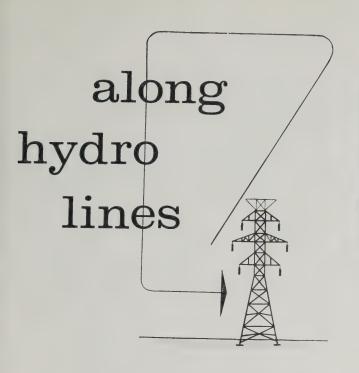
While the new wire-on-time plan is restricted to residential and farm customers served directly by Ontario Hydro, full co-operation and tangible assis-

tance is being offered to municipal utilities who wish to establish similar plans. Through its regional offices, Ontario Hydro will make available, on requisition, the necessary business forms.

A kit is being prepared which will be made available to the utilities for distribution to electrical contractors within their service areas. It will contain sample municipal agreement forms, payment schedules, customer statement of satisfaction forms, an information pamphlet explaining the plan and instructions to contractors.

In addition to its advantages in the load-building field, the wiring time-payment plan provides utilities with a tangible way of expressing their interest in customer problems. Several utilities have already introduced wiring time-payment plans in their sales programs.

It is expected that some utilities, which may be unable to provide the necessary financing at the present time on a continuing basis, will adopt the plan for the duration of the supplementary heating promotion.



Chatham Hydro Changes



Retirements, long-service awards and new appointments have recently been announced by the Chatham Public Utilities Commission. Fred Clark, stations superintendent, is retiring after 42 years' service. He has seen utility staff grow from 60 to 170, and the number of substations increased from one to six. He is being succeeded by Jack Wallace, who has been deputizing for Mr. Clark for several years.

Also retiring, after a similar period of service, is Roy R. Wood, treasurer. His successor is William Coltart, formerly an assistant to Mr. Wood.

The two retiring P.U.C. veterans, together with line superintendent Ross Babcock, who received a 25-year service pin, were honored at the utility's annual dinner. From left to right in the photograph are: S. G. Thomson, chairman; Mr. Clark, Mayor Garnet Newkirk; and R. S. Reynolds, general manager and secretary.

It's Public Speaking Time Again



The Ontario Public Speaking Contest is in full swing in towns and cities throughout the province, and the finals, in April, are fast approaching.

Last-minute details have been settled in the city of Guelph. From left in the photo above, are: A. G. Stacey, general manager, Guelph Board of Light and Heat Commissioners; C. L. Allen, principal of Central Public School and co-ordinator of the public speaking contest in Guelph; and Maurice Smith, chairman of Guelph Board of Education.

The Guelph Board of Light and Heat has provided a total of \$90 in prizes to elementary and secondary school winners in the city, and has offered transportation to the regional finals. As well, the Guelph Board has made available information kits dealing with various aspects of electricity.

"There are several reasons why we strongly support the public speaking contest," Mr. Stacey says. "From an educational standpoint, it is important for people to be able to stand up and express themselves in front of an audience.

"Just as important, these students are our future customers, and they are growing up in a world which is going to be even more mechanically and electrically minded than it is now. Those who choose an electrical subject for their speech are gaining knowledge of the history of public power in Ontario, something they might not otherwise learn."

New Ingersoll headquarters Built with service in mind

One of the most important events in the 50-year history of the Ingersoll P.U.C. took place in December with the official opening of the new utility centre. The move brought all operations under one roof, with space and facilities to provide for the needs of the utility now and in the future.

Located on the town's outskirts, the integrated P.U.C. centre was formerly occupied by an automobile dealership, a restaurant and motel. With a stock room, large entrance doors, repair area, display

windows and office space, the premises were well suited for conversion to a utility operation.

Containing approximately 9,000 square feet of office and service area, the centre is situated on a two-acre site, and includes ample paved parking space for staff and customers. The building is occupied by 16 of the commission's 22 employees in the Hydro, water and sewage departments.

Scheduled to unveil a plaque at the official opening, Ontario Hydro Chairman W. Ross Strike declined the honor in favor of Chairman John A. Bowman, who has served on the Ingersoll commission for 29 years. Mr. Bowman's name, together with those of Mayor Ross Fewster and Commissioner C. A. Love, is inscribed on the plaque.

In his address at the opening, Mr. Strike noted that Ingersoll had been partners with the provincial Commission from the start, being one of the 14 original Hydro municipalities. "You have taken a real step forward," he said, "and are going to be able to give your customers even better service in the future."

municipal briefs

Caledonia P.U.C. is justly proud of its new building which includes a garage, meter repair shop, warehouse and offices. More than 100 customers visited the premises during an open house, and they were pleased to learn that the building cost only \$5,800, which will be derived from revenue.

Peterborough Utilities Commission is considering the use of an electronic computer for billing. As this would entail major amendments to present procedures in dealing with customers, a long, hard look will be taken before any change is made. The possibility of renting time on a computer employed by private industry will receive early study.

To improve the appearance of their municipalities at Christmas time, a number of Hydro utilities offered prizes for the best outside decorations. Among them were Sudbury, Weston and Oakville.

Christmas mail sometimes complicates utility billing as it did in one instance for Lindsay Hydro. A cheque mailed by a business man in plenty of time for the discount under normal conditions, didn't quite make it. He wrote asking the commission to allow the discount on his past record for parsimony. It did.

Toronto Hydro, largest municipal Hydro utility in Ontario, estimates its capital expenditures for 1962 at \$3,329,081. Estimates for the year by other Hydro utilities, large and small, include the following: West Lorne, \$9,000; Queenston, \$7,300; New Hamburg,

\$10,000; Hespeler, \$29,860; Fergus, \$20,500; Kingston, \$420,000; Frankford, \$14,500. Considering that there are some 350 Hydro municipalities in the province, and that Ontario Hydro estimates its own capital expenditures for 1962 at \$113,000,000, the importance of Hydro construction becomes apparent.

The trend to underground is not confined to Ontario. According to the Daily Commercial News and Building Record, the Montreal Electrical Commission has a long-range goal to put underground all overhead wires on the 950 miles of streets in the Quebec metropolis. In 1961, \$21/2 million were appropriated for this purpose, and \$31/2 will be spent in 1962.

North Grimsby has purchased the township street lighting system from Ontario Hydro at a cost of \$14,810. Noting that the township had \$14,810.66 in accumulated funds collected through Hydro accounts, Reeve Betts quipped to the Ontario Hydro representative "What about the 66c? Did you people overlook that?"

Private corporations keep their shareholders informed with more or less elaborate annual reports. These are beyond the means of most smaller utilities, but a number of them are turning to the press for this purpose. Vitally interested in local Hydro progress, the newspapers usually co-operate. Parkhill P.U.C. is an example. Its simple account of the year's highlights is carried, word for word, in the form of a letter to the editor of the Parkhill Gazette. It is signed: P.U.C.

"Beware of trying to operate too cheaply" was the advice given electric utilities by George Vaughan, C.G.E., at a recent O.M.E.A. meeting. He urged the use of knowledgeable and enthusiastic salesmen rather than "drones and cast-offs" from other departments. But he suggested that utilities should first search their own staffs for suitable sales material, not overlooking the union representative or the line foreman. "If you must look outside," he said, "be sure to pick the best—someone already active in your field."

Rate adjustments designed to increase revenue have been recently announced by Kingston, Port Burwell and St. George. Milverton has revised its rates downward. To help promote greater use of electricity, Vankleek Hill has discontinued the use of the fourth rate block of its residential rate structure, and Port Elgin has reduced its commercial cooking rate by one mill to 1.2 cents. Barrie is applying residential rates to commercial customers with connected loads of less than five kilowatts. As the utility is adopting a cyclic method of meter reading and billing, it will actually save money by changing its 400 small commercial customers to a bi-monthly billing.

Herbert L. Pringle, P. Eng., has retired after 36 years of engineering service with the Whitby P.U.C. He also served at one time as superintendent and secretary-

Pension Plan Progress in 1961

The Municipal Hydro-Electric Pension and Insurance Plan continues to grow. A year-end report issued by Bertram Merson, secretary-treasurer of the pension committee, reveals that four utilities joined both the basic and supplementary plan in 1961. They were Mimico, Palmerston, Espanola and Thornbury. Municipalities within the basic plan adopting additional supplementary benefits during the year were Oakville and Weston.

Information concerning the plan may be obtained from any member of the committee: P. R. Locke, St. Thomas, chairman; R. S. Reynolds, Chatham, vice-chairman; G. R. Davis, Kingston, director; B. Merson, Toronto, director and secretary-treasurer. Office is room 906, 14 Carlton Street, Toronto.

treasurer. Stanley Sills, electrical superintendent, Niagara Falls Hydro, has retired after 41 years' service to the city. L. J. Penhale has retired after 27 years on the Exeter P.U.C. Frank Thomlinson has been named manager of Toronto Hydro's Consumer Service Department. Formerly manager of the Power Service Department, Mr. Thomlinson succeeds Wilson J. Wylie, who retired recently after 40 years of service. M. J. Sulpher, Chairman, Renfrew Hydro, has retired after 16 years as a member of the commission. W. R. Sweetnam, Chairman of Hespeler Hydro, has resigned after 19 years on the commission. He has accepted a position in Kingston. Lorne A. Waddell has been elected chairman of Lindsay Hydro. H. H. Brown becomes vice-chairman.

West Central Region Becomes Niagara

Effective January 1, 1962, Ontario Hydro's Niagara and West Central Regions, now undergoing consolidation, will be known jointly as Niagara Region. Headquarters are at Hamilton.

Toronto Central Chapter Formed

Representatives from seven utilities in Metropolitan Toronto met recently to form the Toronto Central Chapter of the Electric Service League of Ontario. Participating utilities included Toronto, Leaside, East York, Forest Hill, York Township, Weston and Swansea. Other Metro commissions are expected to join later.

League president James A. Blay, Ontario Hydro's Director of Public Relations, welcomed the new group and noted that there were 17 or 18 such chapters already in existence, with almost as many others in the process of formation. He felt that one of the



Executives of the new Electric Service League chapter are, left to right, front row: Harry Cassan, secretary-treasurer; Frank Thom! nson, president; T. G. Piper, vice-president. Back row: Ken Rumble, Bill Freeman, A. J. Healey, C. Reid and M. Lee.

greatest advantages of a chapter was the opportunity it afforded for a united approach to advertising and sales promotion.

A. M. Doyle, 1st vice-president of the League, told the gathering that anything that was good for the electrical industry was good for its individual components. He had facts and figures to show how each segment of the industry had benefited when a 6,800 home subdivision at Brampton was built to Medallion standards.

The meeting was held in the Cafeteria of Toronto Hydro's new service centre. Chairman Bertram Merson said he welcomed the opportunity to provide the facilities in the interest of the industry.

Time Out for a Bonspiel



Curling is sweeping the country these days, and utility personnel are joining the trend. Rinks representing 14 Hydro utilities joined rinks formed by Kummercial Klub members and Ontario Hydro recently in the first A.M.E.U. bonspiel held in Eastern Ontario. The bonspiel, to be an annual affair, was held in Morrisburg. Winner was a Cornwall entry skipped by Carl Hussey, Zennith Electric. His rink won the D. J. Stitt Memorial Trophy donated by Morrisburg Hydro. Shown in the photo, left to right, are: Gordon McNeeley, Smiths Falls; J. W. Young, Ontario Hydro; Joe Charron, Rockland; and John Lyons, Almonte.

George Shreve Retires at Oshawa



Retiring after almost 30 years as manager of the Oshawa Public Utilities Commission, George F. Shreve was guest of honor at a dinner tendered recently by the Oshawa commission. Presentations and warm words of praise from his associates, as well as letters and telegrams from friends across the province, helped make the occasion memorable. Ontario Hydro Chairman W. Ross Strike and Adam Smith, manager of the Central Region, were among the guests present. Henry F. Baldwin, chairman of Oshawa Hydro, presided. Mr. Shreve is shown in the photograph accepting a gift presented by William Gibbie, left, office manager, and Charles Barnes, electrical superintendent, on behalf of the staff

THE NEW COMMISSIONERS (Continued from page 2)

An economic executive assistant to the Commission from 1939 until 1942, Mr. Gathercole has considerable knowledge of and experience with Ontario Hydro.

William G. Davis, a solicitor, is M.P.P. for Peel. Called to the bar in 1955, he entered the Legislature four years later in 1959.

Mr. Gathercole, a graduate of McMaster University and the University of Toronto in economics, was assistant provincial statistician from 1945 to 1950. A year later he was appointed provincial economist. He assumed the additional role of assistant comptroller of finances in 1954, and was named deputy minister of Economics two years later.

A member of Ontario's Budget Committee and the University Affairs Committee, Mr. Gathercole has been the Ontario government representative on the Federal-Provincial Continuing Committee on Fiscal and Economic Matters since the committee was established in 1955. He is chairman of the financial advisory committees for investment funds of the Supreme Court of Ontario and the Public Trustee of Ontario.

He has been a member of various study committees, including those on the establishment of the

Metropolitan Toronto Plan, the Ontario Hospital Insurance program, and unconditional and educational grants. He is at present joint chairman of the Ontario Committee on Portable Pensions.

Much of Mr. Gathercole's work has been in the field of economic planning and development. He has directed and presented the technical phases of five of the Ontario Government's major submissions to Royal Commissions.

He is past president of the Mississauga Golf and Country Club, a director of the Royal Botanical Gardens, and a former member of the Senate of McMaster University.

Mr. Davis attended Brampton High School, the University of Toronto, and Osgoode Hall. A keen interest in world politics, while attending the University of Toronto, won for him a scholarship to the Institute of World Affairs.

Following graduation, he entered his father's law firm, now Davis, Davis and Webb. When elected to the Legislature at 29, he was the youngest Member.

He is a member of the Select Committee on the Organization of Government and the Legislature Standing Committee on Energy. Mr. Davis was also chairman of the Legal Bills Committee during the last session.

He continues to live in Brampton, where he is past director of Brampton Chamber of Commerce, and a former member of Peel Memorial Hospital Board, as well as Brampton Public School Board. He acted as building campaign chairman of the Peel County section of the Canadian Institute of the Blind, and takes a keen interest in the Retarded Children's Association.

A member of the Brampton Kiwanis and the Brampton Curling Clubs, Mr. Davis is married and has four children.

Former O.M.E.A. President Dies

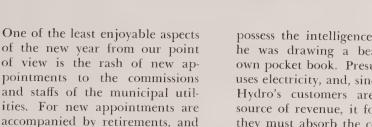
Peterborough lost one of its leading citizens with the recent death of Gordon S. Matthews. He had been chairman of the Peterborough Utilities Commission from 1926 to 1953, and president of the Ontario Municipal Electric Association in 1938-39.

Mr. Matthews and his father, the late T. Frank Matthews, served a total of 45 years on the Peterborough commission. He was a former head of the Matthews Packing Company, which eventually became the Peterborough branch of Canada Packers Limited. He retired as manager of this branch 12 years ago.

Commenting on Mr. Matthews' death, P.U.C. Chairman R. E. Knox said: "We are very sorry to lose a citizen of such calibre. He did a great deal for the City of Peterborough."

Mr. Matthews is survived by his wife, the former Agnes E. Eastwood, and three sons, Harold, Gordon and Jack, all of Peterborough.

OFF THE WIRES



be missing from the various gatherings which bring Hydro people together from time to time in the course of the year.

this means that old friends will

We sincerely regret that we cannot pay tribute to all who are leaving, for even a year of public service represents an important contribution to the welfare of the province. Public service, of course, is its own reward, and those who pursue it are not in search of recognition. We will, however, say a sincere thank you to those stepping down and extend a hearty welcome to new members of the family.

On December 4th, 1961, at 1932 hours, some kind of a person took a pot-shot at a power line insulator at Penetang. The insulator was worth \$4.62. But it doesn't end there.

For a period of two hours and 47 minutes, 6,085 Hydro customers were blacked out. These included 5,668 domestic customers. 32 industrial customers, and 385 commercial customers.

Cost to replace the insulator was: truck and equipment, \$40; labor, \$271; material, \$57—for a total of \$368. This does not take into account revenue losses, production losses or loss of good will.

Doubtless, this chap did not

possess the intelligence to realize he was drawing a bead on his own pocket book. Presumably, he uses electricity, and, since Ontario Hydro's customers are its only source of revenue, it follows that they must absorb the cost of conduct such as this.

There are annual reports, short annual reports and short short annual reports, but the prize for brevity probably belongs to the Toledo Edison Company. It managed to sum up its progress in half a page of the employee magazine in a form designed for clipping. "Tear along the perforations and the report will fold to a size that will fit easily into your wallet," the company advises. The report does contain a goodly number of statistics, but we wonder how many employees will find room for it. After all, company progress may be their bread and butter, but they've got to save room for the lettuce.

Several inhabitants of London's north end have taken the pledge as the result of shenanigans encountered about the crack of a cold dawn on New Year's Day. In the process of preparing a before bed snack, these unfortunate celebrants saw the light when they turned on their stoves. Water flowed where gas was supposed to be.

It seems that a break had occurred somewhere in the neighborhood, bringing a water main into close proximity with a gas

line. Water forced its way through the gas pipes, affecting some 450 homes. Apart from the affront suffered by the partygoers, greatest discomfort was the lack of heat in homes equipped with gas. Portable electric heaters were pressed into service, and en-



terprising individuals, like the pert Miss shown in the photo, found the gas stove a handy place to set up their electric grill.

Dr. W. T. Shaw, a physician of Petrolia, Ontario, practises what he preaches where he practises. A member of the Petrolia Public Utilities Commission, Dr. Shaw saw to it that his modern new offices on Petrolia Street were heated electrically.

And there is the classic want ad that read:

Young man with 20-watt amplifier wishes to meet young lady with 20-watt amplifier — object:

got a hard-to-heat room? building a rec' room? workshop? attic room?

Make your home complete



With built-in electric heating units, you don't have to extend or strain your present heating system. No duct work or expensive structural changes are required to provide maximum heating comfort in the added living space you're planning or in a presently hard-to-heat room. Safe, clean, flameless electric heating units provide heat almost instantly. Produce no dust, dirt or fumes.

CALL YOUR QUALIFIED ELECTRIC HEATING CONTRACTOR. HE IS TRAINED TO SERVE YOU.

Your Hydro and Electrical Contractors are working together to help you make *your* home complete with electric heat.

ASK HOW YOU CAN ARRANGE TO INSTALL NOW AND PAY LATER

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The Editor, ONTARIO HYDRO NEWS 620 University Ave.,
Toronto, Ontario

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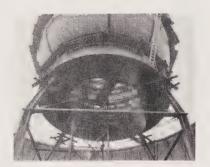
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HYDRO NEWS



FEBRUARY, 1962





Any resemblance between the power projects built by Ontario Hydro across the province during the last 50 years and the one now taking shape at Douglas Point is purely a matter of kilowatts. While the end product remains the same, the approach is strictly space-age. The "Shape of Things to Come", commencing on page 14, sums up activity in the field of nuclear-electric power over the past decade. It explains how it came about that customers of Ontario Hydro will be the first in Canada to shave, heat, cook and live with power derived from the atom.



Everybody knows that "electrics" went out with hoop skirts, bonnets and solid rubber tires. But silence was one of their many virtues, and they may be stealing quietly back in. Economical, fumeless and uncomplicated, the "electrics" have many points which appeal to us all. And the utilities see them in terms of valuable, off-peak load. Freelance writer Gordon Murphy brings us up to date on the situation in his article commencing on page 8.

FEBRUARY, 1962 ONTARIO HYDRO NEWS

CONTENTS

- 2 The Pattern Emerges
- 7 Myth of the Open Flame
- 8 The Electric Auto Revival
- 12 Our Debt to Tesla
- 14 The Shape of Things to Come
- 19 Safety on Ice
- 21 Along Hydro Lines
- 25 Off-The-Wires

THE COVER

At first glance our cover looks like a mood picture of mist-shrouded Kilimaniaro. In fact, it is a work-a-day construction scene at Ontario Hydro's Little Long Rapids project, where men have devised methods for working at 40° below zero. Clouds in the photo were produced in the frigid air by steam used for heating forms.

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Editorial

IN THE PUBLIC EYE

When they think about it all, the people of Ontario may be inclined to regard the question of public versus private ownership of electrical supply utilities as largely rhetorical since, to their way of thinking, the die has long been cast in favor of the former. They have only to look at the statistics. In 1961, Ontario Hydro and the associated municipal utilities supplied 90 per cent of all electrical power consumed in the province.

But there may be a tendency to regard this province as the norm and to suppose that pretty much the same circumstances exist universally. To help keep our own status in proper perspective it is worth reviewing the ownership situation as it exists outside Ontario.

In all of Canada, in 1959, pub-

licly-owned utilities generated 51 per cent of the electrical power produced in this country—private utilities accounted for 28 per cent, and 21 per cent was produced by industry for its own use. At the present time, publicly-owned utilities supply widely varying percentages of the power requirements of all ten provinces.

Expropriation shifted the balance very decidedly in favor of public ownership in British Columbia, and the electric power requirements of Quebec are supplied almost equally by public and pri-

vate enterprise.

But the percentage of public ownership in Ontario is far higher than it is in Canada as a whole. And the contrast between this province and the United States is even more startling. Investor-owned utilities and industry accounted for 77 per cent of electrical production in that country at the end of 1960. Even this represents a gain for public ownership, since 90 per cent of requirements were produced privately 20 years ago. And the trend to public ownership is being fought south of the border with a bitterness missing in Ontario for many decades.

This is not to suggest that the system which has come to supply an overwhelming percentage of the electric power consumed in Ontario is without critics, nor that all of its people, procedures and policies are guided from above and, therefore, infallible. That it has been successful is pointed out in a recent editorial in the *Windsor Star*:

"How fortunate the people of Ontario are in their Hydro rates can be judged by comparative figures. Some of these comparisons are startling.

"The domestic rate in Windsor, based on 300 kilowatt-hours used in a month, is \$3.56. It is \$4.37 in Montreal; \$6.31 in St. John's, Newfoundland; \$6.85 in Regina; \$7.90 in Halifax—and \$9.63 in Victoria and Vancouver.

. . . "There is also a startling contrast closer to home. The \$3.56 figure for Windsor compares to that of \$9.18 prevailing in Detroit. The Ontario Hydro, working with its municipal affiliates, has saved the people of this province almost untold millions."

Ontario does seem unique, both in the percentage of electric power supplied by public ownership, and in the degree of acceptance the system enjoys. This is probably due in no small part to the structural make-up of the organization as it was set up back in 1906 and which cannot be properly likened to any other system in its inter-relationship with government, municipalities, industry and the rural community.

Whatever the reasons underlying the success of public power in Ontario, one thing is certain. There is no room for complacency. Those of us who have been entrusted with its development would be ill-advised to seek haven in the past. All eyes are upon us, and we must continue to prove that our way is best.

This we can only do by keeping in mind the basic tenet upon which Hydro in Ontario was founded. We must at all times endeavour to provide the best possible service at the lowest possible cost. There is no other way.



THE PATTERN EMERGES

New money-saving procedures pre incorporated as the Little Long Rapids project assumes its identity.

At first glance there is little to distinguish the bustling, 900-man construction project t Little Long Rapids on the Mattagami River from a dozen others undertaken by Ontario Hydro during its reat post war expansion program. Like many, it epresents the struggle of men ind equipment against the orces of nature, and its completion will mark another ictory over rampaging water, northern isolation, blackflies, nd the merciless cold.

But, to the engineer and onstruction man, each of hese projects has its indiidual problems, and requires articular techniques which, ogether, impart a completeseparate identity to each evelopment. Little Long Rapids is no exception. cheduled to deliver power ate in 1963, the project is eginning to assume a comrehensive pattern. And its nique characteristics are beoming apparent—either at ne site or on the drawing oards. (Continued)

was 40 degrees below zero when hoto, left, was taken of drilling powerhouse area at Little Long apids. Work proceeds in diveron section, right, as cofferdamolds back Mattagami waters.





THE DYKES — Because of the nature of the area, the dykes required to contain the headpond are the longest ever needed for an Ontario Hydro power development. Extending from the main dam, on both sides of the river, the two dyke sections will have a total length of 4½ miles. They will have a maximum height of 60 feet and require the placing of about 3.5 million cubic yards of sand, gravel, glacial till and rock.

Muskeg is a complicating factor. It must all be removed, the foundations dried, and undesirable material excavated before dyke material can be placed. The depth of excavation varies from a foot or so to 35 feet. Equipment which operates on a radio-active source for measurements is being used to check the quality of dyke materials. It is thought to be the first time this type of equipment has been used for this work in Canada

THE DIVERSION — As described elsewhere in this issue, the fortuitous location of Adam Creek has enabled alert Ontario Hydro engineers to make important savings in water diversion facilities. By building a diversion and control works at the head of the creek, it will be possible to divert excess water from the Mattagami River to bypass Little Long Rapids and the future Harmon and Kipling developments downstream.

The Adam Creek diversion will eliminate the need for eight permanent sluiceways and effect other important construction savings. This diversion will also make it possible to minimize fluctuations in the tailwater levels of all three Ontario Hydro plants to maintain maximum output during flood periods.

THE TRANSMISSION LINE — As one of the plants scheduled to supply power to the extra-high-voltage transmission system now under construction by Ontario Hydro, Little Long Rapids represents one phase of a unique venture. Power from the three Mattagami River plants, and from Otter Rapids, will be funneled into the EHV line which will carry over half a million kilowatts to heavily populated Southern Ontario, at 460,000 volts.

Collecting point for the EHV complex will be the Pinard transformer and switching station to be built near the Commission's Abitibi Canyon Generating Station. Initial power will be sent south at 230,000 volts, but the line is expected to operate at full voltage by 1965.



THE GENERATOR ASSEMBLY -Major savings will be effected by a new method of generator assembly to be employed at Little Long Rapids for the first time by Ontario Hydro. Normal practice is to assemble the heavy rotors on the erection bay floor and to swing them into place with a crane. Instead, the rotors at Little Long Rapids will be assembled gradually in the operating position. This "incremental" assembly will halve the size of the crane required and cut the cost of powerhouse construction.

Photo, top left, depicts progress in main dam section of Little Long Rapids development. Powerhouse site, some 200 yards from river, is not visible. Top photo: time-tested winter techniques of Ontario Hydro keep workers snug in construction community. Camp provides most comforts of a modern municipality.

THE EXCITER SYSTEM — Additional savings will be achieved at Little Long Rapids with the use of a new type of "exciter"—the D.C. generator used to magnetize the rotors. Replacing the direct-connected exciter supplying D.C. to the rotor magnets, is an excitation system where the current is converted to D.C. by the use of rectifiers. The new equipment is not coupled to the generator unit, but is housed in a separate room and feeds current to the generator through cables.

Aside from initial cost advantages, the equipment requires less maintenance and has a faster response during load changes. Little Long Rapids will be the first hydro-electric generating station in Canada to be so equipped.

PROGRESS TO DATE - Perini Limited, responsible for dyke construction, has virtually completed one of the sections. Ontario Hydro's construction forces have also made considerable progress in several areas. A "U" shaped cofferdam was built out from the west bank last summer. and crews are building the two-gate diversion section of the main dam in this dewatered area. The cofferdam will be removed this spring and a new one will be extended from the east bank to permit construction of the second half of the main dam.

Work is also proceeding on the powerhouse, headworks and tailrace which are located some 200 yards from the river. Concrete wing walls have been constructed on both sides of the river, and the Adam Creek control structure has been completed.



Standing forlorn in the muskeg, this control structure at head of Adam Creek will help contain waters of Little Long headpond. Excess will be flushed down creek to by-pass plants.

BONANZA OF ADAM CREEK

Adam Creek isn't exactly an impressive body of water at the best of times, and after a dry spell its hard to find. For boating or swimming it's a dud, and no prospector has ever extracted an ounce of gold from its skimpy waters. Yet Adam Creek is likely to yield a greater bonanza than did most rich streams in the heyday of the Klondike.

The creek makes its inauspicious start at the Mattagami River about a mile above Little Long Rapids, and it meanders back to the river some 20 miles downstream. In the process it by-passes a series of rapids, including Little Long and the future sites of Harmon and Kipling generating stations, soon to be built by Ontario Hydro.

Engineers and surveyors at work on the preliminary stages of Little Long were quick to discover the potential of Adam Creek as a money-saver. By installing a control structure at its head, they reasoned that the creek channel could be used to sluice off excess water above Little Long and return it to the river below Harmon and Kipling. This would eliminate the need for several costly sluiceways at these plants.

It was a multi-million dollar idea that is fast becoming a reality. A lonely concrete control structure now stands out starkly from the surrounding muskeg at the creek intake. Its purpose will become more apparent as the project progresses. The control gates will form an integral part of the extensive dykes which will extend from each wing of the main dam and powerhouse. When the headpond has been filled it will then be possible to direct excess water down the creek.

Without Adam Creek, control facilities would have been particularly expensive, for the Mattagami is a "flashy" river. Flows as high as 150,000 cfs and as low as 1,500 cfs have been recorded. Three big rivers, the Mattagami itself, the Kapuskasing, and the Groundhog together drain 19,000 square miles of watershed, and there are no upstream control dams to check the torrents.

The Adam Creek diversion represents an added bonus in the form of reduced coffer dam costs. Because Little Long will be in service, discharging water into the main channel, work at Harmon and Kipling will have to be carried out behind coffer dams, but they won't have to be designed for heavy flows, and the spring freshet will not interfere with construction schedules. Adam Creek is expected to save Ontario Hydro an estimated \$13,000,000.



Prepared by Maurice Prior, executive chef of Toronto's Granite Club, the new dish goes on display at seminar on commercial electric cooking. Helen Schulze, its creator, has first taste.

MYTH OF THE OPEN FLAME

Pork tenderloin à la Niagara is tasty proof of electricity's superiority.

Open-flame broiling still receives the nod from many chefs and homemaker-cooks long after they have accepted electricity as best for all other methods of cooking.

Mrs. Helen Schulze, of Niagara Falls, just can't see why people cling to a centuries-old method of broiling when electricity can do the job just as well, without the odor and grime of an open flame.

"I've used electricity for cooking for the past 15 or 18 years, and I like it for every method of preparing food," she says. "It's safe, clean and doesn't smell.

"Some people say they don't like broiling with electricity, but I just can't see any problem. You can broil well with electricity if you know how to handle your stove."

Mrs. Schulze proved her point when her recipe won first prize recently in a contest for a dish with a distinct Niagara flavor and made of ingredients grown in the area. The contest was sponsored by the Niagara Development Committee.

The winning dish—pork tenderloin à la Niagara—is broiled on skewers and served with baby lima

beans, a mound of wild rice with raisins, and sour cream sauce.

Pork tenderloin à la Niagara was first introduced to chefs, cooks and restaurateurs in the Niagara area during a four-day commercial cooking demonstration and exhibition held in Niagara Falls, and sponsored by manufacturers, municipal utilities and Ontario Hydro.

Mrs. Schulze has been cooking most of her life, and, since moving to Niagara Falls 25 years ago, she has become widely known for her culinary skills. Her guest list for warm-weather parties occasionally reaches 200, and she often has 20 for dinner. An active businesswoman, she owns a kennel, and is president and general manager of a manufacturing firm.

Her dish will soon be featured on restaurant menus throughout the Niagara Peninsula, and the Niagara Development Committee expects that pork tenderloin à la Niagara will become as world-renowned as the Falls themselves. Gourmands can obtain the recipe from J. A. MacTaggart, Foxhead Motor Inn, Niagara Falls, Ontario.

The first motor vehicle in Canada was an "electric,"

and its appearance on the streets of Toronto

in 1896 created a sensation.

By 1900 there were cars of all shapes on the road

—gasoline holding a slight edge

over electricity, with steam also an important contender

for the private transportation market.

Henry Ford settled the issue

in favor of the internal combustion engine

when he cranked out the famed model "T".

But "electrics" are staging a comeback, and utilities

are taking them seriously

—could they be the load of the future?

THE ELECTRIC AUTO REVIVAL

by Gordon Murphy

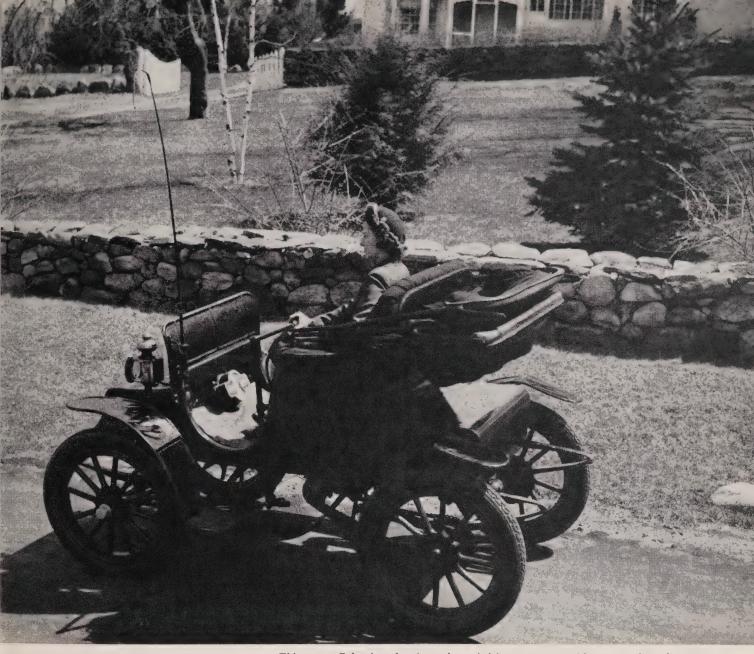
A utility executive with a leaning toward statistics recently came up with some interesting figures based on what might have been if the "electrics" had succeeded in capturing the automotive market. He found that there are about 5,000,000 motor vehicles in Canada, and that they consume 3.7 billion gallons of gasoline annually. Assuming that one gallon of gasoline equals the equivalent of 45 kwh., and allowing for different efficiencies of the two types of vehicles, he concluded that, if all were electric, some 70 billion kwh would be required for recharging.

Figures such as these, coupled with a general resurgence of interest in electric vehicles of all kinds, are making electric utilities sit up and take notice.

They like the thought of thousands of electric vehicles plugged into recharging outlets all through the long, off-peak night hours.

That the electric vehicle comeback is more than wishful thinking is well demonstrated by Silverwoods Dairy Limited of Toronto. Thirty of its large fleet of delivery trucks disdain the gas pumps and "fuel up" with electricity at the end of a day's run. And the reaction of both drivers and management to the electric fleet is revealing.

"The best thing since the horse and wagon," is the way one veteran driver sums up his truck's performance. "They're easy to handle and easy to work from. And there is no waste. When you take



This sporty Columbus electric roadster vied for supremacy with steam and gasoline cars in 1904. As whip suggests, car could be hitched to a horse.

your foot off the control, the whole truck stops, motor and all. And my customers appreciate the lack of engine noise."

When fully charged, the Silverwoods trucks have a range of 20 miles, which is adequate for the particular application. Cost of energy for a day's run is about 25 cents.

"In comparison," says Vic Eggleton, one of the company's fleet supervisors, "our gasoline-driven trucks do from 10 to 15 miles a day and burn about four gallons of gas. With gas at about 40 cents a gallon, that means a difference of \$1.35 per truck per day in operating costs in favor of the "electric".

He figures maintenance costs to be about one-

third that of gasoline trucks. There is very little wear and tear on brakes or tires. The electric trucks have no transmission or clutch, and only eight grease points. They don't require oil, and they have no radiators. "Starting is never a problem," Mr. Eggleton continues, "and the life of an electric truck is ten years, compared with five years for a gasoline-driven truck."

Company executives stress that these economies must be considered over the 10-year period in comparing initial costs. "Electrics, such as those operated by Silverwoods, cost about \$6,000, including batteries and charging unit, compared to about \$3,600 for a gasoline-driven truck of similar size. High battery

Among dairies operating electric trucks for deliveries are Mason's Dairy, St. Catharines, and Royal Oak Dairy, Hamilton. Photo, right, shows Silverwoods salesman making his rounds with electric vehicle.







costs (\$1,800 for the two used in each Silverwoods vehicle)—and the fact that the trucks are imported, contribute to the high initial cost.

Ease of operation has long been a feature of electric trucks, some 30,000 of which have been making many-stop deliveries in England of milk, bakery goods, laundry and other items, for years. Most of the approximately 200 electric delivery trucks in Canada are used by dairies—a fact which is probably related to the question of fatigue.

As Mr. Eggleton of Silverwoods explains: "Elimination of the conventional engine and transmission makes a flat curb-height floor possible. This eliminates the continual stepping up and down for, and with, supplies, and it makes it much easier for the driver to maneuver inside the truck. This greatly reduces the fatigue which has been the milkman's lot for so long."

Each of the two batteries in the Silverwoods trucks weigh 1,100 pounds, and about five hours is required to bring them up to full charge. This is achieved in a specially-built powerhouse serviced by a 550-volt supply. There is a separate circuit for each truck, and the powerhouse also contains circuits for eight recharging units serving refrigerated trucks.

The company's fleet of electric trucks in Toronto has been in operation for only a few months, and is still under intensive study. It may be significant that the dairy recently ordered six new electric units for its operations at London, Ontario.

Electric passenger cars, on the other hand, must be capable of greater ranges and higher speeds if they are ever to become popular. Considerable progress has been made in this direction recently, and four companies are planning production in the near future of cars capable of speeds up to 40 m.p.h. and



Fleet supervisor Vic Eggleton, top, of Silverwoods, checks charging rate in vehicle "powerhouse". Size of batteries is indicated, below. Each weighs 1,100 pounds, and two are needed to drive a truck. Company estimates energy costs at 25c a day, per truck.



ranges up to 80 miles. Expected to emerge soon is the ideal second car—an electric which will sell in the neighborhood of \$2,000.

With upwards of 200,000 electric vehicles, ranging from delivery trucks and fork lifts to street sweepers and golf carts, now in operation in the United States, and new and improved passenger models in the offing, utilities in that country envision a future in which millions of electric cars, with batteries being recharged at off-peak hours, will each be using about \$50 worth of electric energy a year.

Some see the revival as supporting Thomas Edison's claim that the day will come when more electricity will be used to recharge vehicles than on household appliances and lighting. Skeptics should bear in mind that electricity today costs about one-third what it did in Edison's time, and gasoline costs about three times more.



These utility representatives try out electric truck during a vehicle and equipment display. Its uses include warehouse service, yard storage work and meter reading. Cruising range is 50 miles with 1,000-pound load.

UTILITIES EYE THE "ELECTRICS"

Speaking in his former capacity as president of the Ontario Association of Municipal Electrical Utilities, Harry Hyde, manager and chief engineer of Toronto Hydro, has said that every utility manager should encourage the use of electric vehicles wherever possible. As for Toronto Hydro itself, Mr. Hyde says that developments in electric vehicles are being studied closely, and serious consideration will be given to their use as they meet heavy-duty requirements. In common with other utility executives, he is in favor of the extensive urban use of "electrics" from the standpoint of air pollutionparticularly in downtown areas, where hundreds of idling delivery trucks daily contribute their unhealthy quota to the pollution problem. Owen Sound Hydro is enthusiastic about the economy features of the "electrics" following the testing of a former milk truck for meter reading and service calls. Manager Robert Butter describes the performance and operating costs as "excellent." They drove it 305 miles, usually with a load of 1,600 pounds, and it used 350 kilowatt-hours. "For regular use, however," says Mr. Butter, "we'd want a three-quarter-ton truck with a range nearer 65 miles and a constant speed of 25 m.p.h. And we'd want it a bit more streamlined than a milk truck."

our debt to TESLA



This photograph of Nikola Tesla as a young man shows him engrossed in a technical manual with a piece of early experimental apparatus as an appropriate background.

National Electrical Week

has helped bring the role of electricity

into proper perspective

but one of

the industry's greatest pioneers

seems destined for oblivion

insofar as the public is concerned.

Nikola Tesla is a name revered by engineers and scientific authorities the world over. But since the death of this Serbia-born genius in 1943, his name has dwindled almost completely from the public consciousness.

Yet the printing press that produces these pages and the light by which they are read operate on alternating current—only one of the scores of fields in which the work of Tesla influences our day-to-day lives. From his work bench came the essentials of the ubiquitous television set, the radio transmitter, neon and other forms of gaseous tubes, fluorescent lighting—and a multitude of basic discoveries upon which much of the present day industry has been established.

One good reason, perhaps, for Tesla's obscurity is to be found in his love of privacy, for he never allied himself with an organization which could have perpetuated his name like those of Edison, Marconi or Bell. Then, too, much of his work was highly technical and, while of immense importance, not the sort to capture public imagination.

The fantastic prescience of the man was demonstrated shortly after he invented the first radio-controlled boat in 1898. At that time he predicted that some day a pilotless device capable of flying thousands of miles and delivering explosive charges would serve as a strong argument for peace.

To many of his contemporaries this seemed ridiculous, and it was not until after his death, when unmanned German V bombs were winging over England, that they changed their opinions.

Indeed, he may have envisioned the ultimate weapon, for he once said: "War must be converted into plain suicide. No nation, whatever the provocation, the greed or ambition, will ever plunge into war if that nation knows positively that it is putting a gun to its temple or a knife to its heart."

Tesla, the son of a Serbian Orthodox priest, emigrated to the United States in his early twenties and, legend has it, arrived in New York City in 1884 with a head full of ideas and four pennies to his name. He first demonstrated his brilliance and ability in the laboratories of Thomas Edison, but he soon left, for Tesla preferred to think and work alone.

A deep and intense thinker, Tesla could fashion an intricate mechanism or visualize a complicated problem without ever setting pen to paper. Just four years after his arrival in America he obtained the first patents for an induction motor and A.C. transmission system—the forerunner of the technique used throughout the world today.

His work sparked heated controversy in the late 19th century as to the relative merits of alternating or direct current for electrical systems. Edison had been an exponent of direct current, and while his system was basically more simple, its economical transmission range was very limited.

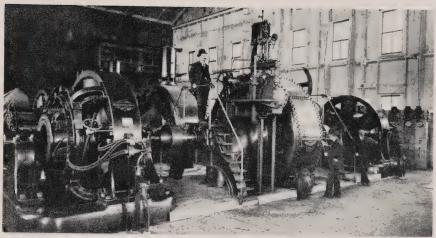
The Tesla A.C. system used the transformer as a

TESLA AND NIAGARA

The problem of how to harness the power of Niagara Falls remained unanswered until the potential of Nikola Tesla's polyphase system became apparent. Engineers then went to work with a vengeance, and, in 1896, power from the Tesla - inspired Edward Dean Adams plant at Niagara Falls, New York, went surging through power lines to Buffalo.

And only last October, when the Power Authority of the State of New York took over the water rights from Niagara Mohawk Power Corporation, did the Adams plant cease operating. The original generators had been in service up to that time.

The Niagara Falls Historical society is hopeful that the old Adams plant can be retained for conversion to an electrical hall of fame. In an interview with Hydro News, city historian Miss Marjorie Williams, who heads the society, said many other groups are interested in preserving the station which is one of the world's first major hydro-electric plants.



These units in the Edward Dean Adams plant, Niagara Falls, N.Y., commenced generating power in 1896. They only ceased operation when the station was deactivated late last year. This pioneer plant owes much to the principles evolved by Nikola Tesla, and is being sought for preservation as an electrical hall of fame.

Residents of the Falls have been actively promoting the proposed hall of fame, and have received plenty of endorsements but no money. Miss Williams said that a proposal to purchase the plant outright and guarantee its preservation will be placed before a convention of the American Electrical and Chemical Engineers Society later this year.

Said Miss Williams: "It will be a crime if the place is destroyed. The original generators are still there, and it is a natural setting for an electrical museum."

Reminiscing one day, Nikola Tesla said: "When I was about nine years old I used to construct little water turbines in the streams that rushed down the mountains near my home. On one occasion I told my uncle that one day I would put a water wheel in Niagara Falls, about which I had read. So, in 1896, when I saw my turbines in action at Niagara Falls, I realized my boyhood dream."

basic component. By this means it was possible to sustain the flow of electric current and to step the voltage up or down according to the need. Long distance transmission thus became practical.

George Westinghouse was one of the first to see the potential of this system, and obtained the rights from Tesla to many of the patents. Tesla's remarkable character is, perhaps, best demonstrated by the fact that he waived his rights to royalties of one dollar per horsepower on his system when Westinghouse faced heavy competition from manufacturers promoting single-phase systems. Said Tesla: "The progress that civilization will be able to enjoy through the use of my polyphase system means much more than the money in question now.

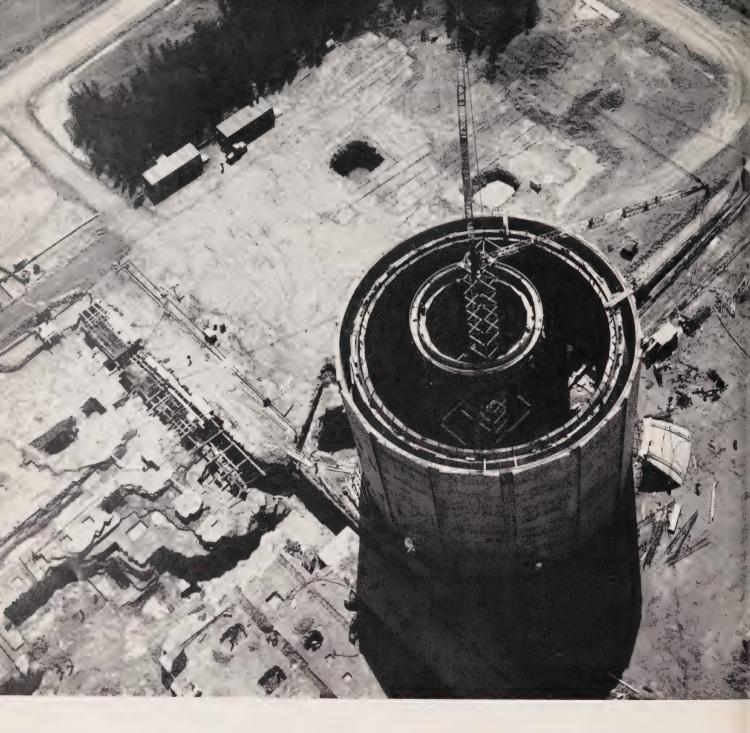
"Mr. Westinghouse, you will save your Company and thus you will be able to develop my inventions.

"Here is your contract, yours and my copy. I will destroy them, and you will have no more request from me for royalties. Is that fair enough?"

Apparently it was, because the work went on, and eventually led to world-wide acceptance.

TESLA'S MAIN PATENTS

- 1. Commutators for dynamo machines.
- 2. Electric arc lamps.
- 3. Regulators for dynamo machines and arc lamps.
- 4. Polyphase machines.
- 5. Electric polyphase motors (27 patents).
- 6. Transformers and methods of distribution of polyphase currents.
- 7. Electrical transmission of power (base for today's industry).
- 8. Conversion of alternating current into direct current.
- 9. Motors, thermomagnetic and pyromagnetic.
- 10. High frequency generators.
- 11. Bulbs for high frequency lighting.
- 12. Electric condensers (capacitors).
- 13. High frequency oscillators.
- 14. Wireless transmission (21 patents).
- 15. Turbines, speedometers, frequency meters, lightning arresters, waterflow meters, etc.



THE SHAPE OF THINGS TO COME

by Adri Boudewyn

This bird's eye view of the reactor building at Douglas Point was obtained before the "lid" went on. It has since been roofed with a dome of half-inch steel. Welds were radiographed to ensure against leaks.

When the Nuclear Power Demonstration project at Rolphton starts feeding 20,000 kilowatts of electricity into the Ontario Hydro system next summer, all eyes will be turned on the first atom power to reach the Canadian consumer.

For Canada it will open the road towards more modern methods of producing electric power for a rapidly increasing population and a growing economy. Ontario Hydro is banking on NPD to prove that Canada is on the right track in choosing heavy water natural uranium reactors for nuclear power.

Nearly a decade has passed since the day when Ontario Hydro first became involved in the spaceage method of power production, joining a study group that led to the establishment of the Nuclear Power Branch of Atomic Energy of Canada Limited.

Canada's participation in the atomic energy program began during the war years with this country's decision to collaborate with the governments of the United States and United Kingdom in the development of atomic weapons. It was around 1952—ten years later—that scientists recognized the definite promise of producing electric power from atomic energy on an economic basis.

Opening of the world's first full-size atomic power plant at Calder Hall, England, in 1956, marked the dividing line between the emergence of nuclear power from the laboratory and its acceptance into the world's energy market. The United Kingdom's atomic power program was, and still is, based on the use of a gas-cooled, graphite-moderated reactor.

Canada, through AECL, used a different approach to the electricity-from-the-atom-race. Ontario Hydro, anticipating the depletion of undeveloped water power resources, and having joined this phase of the nuclear power program at the start, had set its hopes on nuclear power becoming competitive in Ontario with the cost of power developed from coal. AECL scientists and engineers were convinced that with the use of heavy water moderated and cooled natural uranium reactors Ontario Hydro could meet this challenge.

Therefore, the NPD station now nearing completion at Rolphton will embody this type of reactor. It is a joint venture by AECL, Canadian General Electric and Ontario Hydro.

Because of its relatively small capacity (20,000 kilowatts), NPD cannot be commercially competitive with other thermal stations. It will, however, test the basic principle of the heavy water plant upon

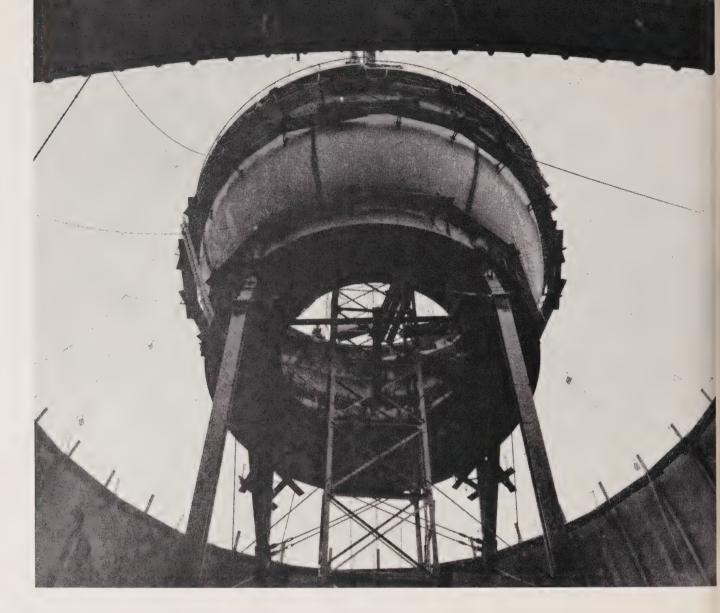
Space-age method of power production has captured public fancy. Since information facilities were provided at Douglas Point, more than 40,000 visitors have been guided about the project.



which the next step of development, the Douglas Point (Candu) project, is based.

Douglas Point, with ten times the capacity of NPD, is being built by Atomic Energy of Canada Limited, with Ontario Hydro providing the site and transmission facilities together with certain engineering manpower and other assistance.

The Commission will operate the plant and purchase the power from AECL. After the plant has demonstrated that it is suitable for operation as part of the Southern Ontario generating system, Ontario Hydro will buy it, at a price permitting the generation.



ation of electricity at costs equivalent to those of a modern coal-fired plant.

Ontario Hydro's assistant general manager (engineering), Harold A. Smith, who has been closely identified with the nuclear power program from the outset, points out that Canada has "much more information" on the characteristics of a heavy water moderated and cooled reactor than other countries.

The Canadian type of reactor allows a physically smaller plant to be built. The features of neutron economy, through the use of heavy water and high fuel burn-up, point towards sound economics for nuclear plants.

Atomic Energy of Canada officials feel that big reactors on the natural uranium—heavy water concept can be expected to give cheaper power in a large power system, such as Ontario Hydro's, than any other kind of reactor available for commercial operation today.

They say: "Here there is a greater fund of knowledge of this technology than anywhere else in the

world. But it would be wrong to say that we prefer our reactors because we know them best. We prefer them because we know of no other kind that can produce cheaper nuclear electric power in Canada."

International competition to derive competitive electric power from the atom is almost as feverish as that which rages in the military field. And there are more competitors.

World interest in the Canadian type of reactor is growing. Already Canada has co-operated with India in building the Canada - India research reactor at Trombay. This is of similar design to the NRX reactor at Chalk River.

Now India has expressed interest in building a plant similar to the Douglas Point project. AECL and Indian Atomic Energy engineers are at present making a study of requirements for such a plant.

A disadvantage of the U.S. type of enriched uranium reactor is that many countries do not wish to be tied to a single source of fuel. Natural uranium is available in many countries, but the United States



The shape of things to come is personified, far left, in view from inside reactor building. Section of formwork swings into position, left, as 4-foot thick walls take shape. Shell of reactor building, below, is now complete. Lower photo shows NPD project which will supply first nuclear-electric power to the Canadian consumer.





is the only commercial supplier today of enriched uranium, the production facilities for which are extremely expensive.

While the U.K. reactors are excellently designed and well adapted to British needs, they involve more extensive site work which would raise costs considerably under North American conditions.

What then, does the future hold for nuclear power in Canada, and what is its place in Ontario Hydro operations? This isn't easy to answer, since there is no historical background to permit extension of trends into the future.

In the 38-year-period—1922 to 1960—Ontario Hydro's power requirements grew at a rate equivalent to 6.6 per cent per annum. The system's primary load growth suggests that something of the order of 22,000,000 kilowatts of generating capacity will be required by 1980, compared to an existing capacity of about 6,700,000 kilowatts.

In its current three-pronged expansion program, Ontario Hydro is placing increasing emphasis on thermal (coal-fueled) steam plants, while progressively developing remaining water power sites. Were nuclear power not available at a competitive cost by 1980, Ontario Hydro estimates it would have to import 26.5 million tons of coal annually.

This is one of the main reasons why the Commission has been an active participant in Canada's nuclear power program since its beginning. If nuclear power proves competitive, Ontario Hydro estimates the capacity of nuclear plants in Ontario by 1980 will equal about one-third of its total resources. Conventional thermal and hydraulic generation will make up the remaining two-thirds.

These points, coupled with the fact that there are major uranium sources within the province as well as facilities for the manufacture of reactor fuel, naturally combine to create a serious interest in the development of nuclear power plants suitable for application in this system.

NPD is, therefore, a know-how project; a stepping stone. When NPD is in successful operation it will

provide a working demonstration of the Canadian

type of reactor.

Douglas Point is the real test. It is a full-scale commercial nuclear power station, and is the cornerstone on which this country's nuclear power program is founded.

It is expected to go into operation by about 1965, producing 200,000 kilowatts from a single unit that will serve bustling Southern Ontario, and will incorporate information gleaned from the design, construction and operation of NPD. AECL expects that, if a second unit were added at a later date, the unit energy costs might be reduced by 12 to 15 per cent.

In this way, under the aegis of AECL, Canada, as a whole, is gaining a sound foothold in the development of this new source of power. This is a national venture of importance both for domestic needs of the future and for the opportunities it may present for nuclear products and technique in the markets of the world

At the same time, Ontario Hydro, while instrumental in providing the opportunity for nuclear power development on this scale, is keeping faith with its obligation to the people of the province to supply power at minimum cost.

Confidence in the Canadian approach has been expressed by the Ontario Department of Energy Resources, whose minister, Hon. Robert W. Mac-

aulay, predicts:

"The heavy water moderated and cooled uranium reactor will be able to compete in the production of electricity with coal-fired stations before 1970."

THE DOUGLAS POINT MYSTERY



V isitors may have wondered at the smoke-blackened ruins which stand lonely sentinel on a hill overlooking the nuclear-electric power project at Douglas Point. This grey stone shell is all that remains of Bruce County's only castle, and, according to the Kitchener-Waterloo Record, it tells little of the mystery which has surrounded the structure since it was built nearly a century ago.

William (Boss) Gray, a native of Scotland, built the castle on 600 acres he acquired in 1871. The building was of stone with walls two feet thick. Each of the 16

rooms had its own fireplace of imported marble, and each room was walled with floor-to-ceiling mirrors

All the windows were shuttered both inside and out. The walls extended above the roof eaves to form a parapet, and mile upon mile of countryside was visible from the lookout tower.

While William Gray's extensive business ventures were well known, few were familiar with the interior of the castle, for he seldom welcomed visitors. But if life at the castle was shrouded in mystery, its owner's departure was just as peculiar. He left without notification two years after the structure was completed—never to return. Even furniture and clothing were abandoned.

Occupied intermittently since, Boss Gray castle was destroyed by fire two years ago at the height of a driving snowstorm. Revealed in the ruins was a dungeon-like room, protected by iron gratings, which had been tunnelled under the yard.

Rumor has it that the castle contained a fabulous wine cellar, and that spirits of a more ghostly nature roam through its rooms.

SAFETY ON ICE



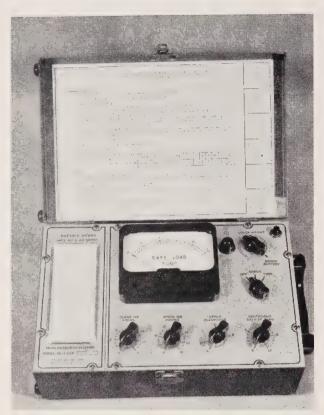
Ontario Hydro contributes to safe travel on the frozen waters of the north.



This battery-operated ice coring tool whirs quickly through ice to provide proof of thickness and composition. It is part of "package" developed by Ontario Hydro for safe travel across ice roads.

Ice roads are a way of life to the people who live in the north, and Ontario Hydro, like lumber and construction companies, sometimes must take advantage of frozen lakes and rivers to transport heavy materials. While chance-taking has always been outlawed, some risk remained because judgment and rule of thumb calculations of the strength of frozen surfaces were not infallible.

In spite of all known precautions, tragedy did strike in January, 1957, when an Ontario Hydro truck broke through the ice near Kenora with subsequent loss of life. And scarcely a year goes by without the papers reporting similar accidents throughout the north, where frozen lakes and rivers



In adopting the scientific approach, Ontario Hydro has come up with an advanced procedure for safe travel across ice. When controls are set on this instrument, the dial pointer will register safe load in tons.

offer tempting shortcuts or provide routes to otherwise inaccessible areas.

But the Hydro accident sparked action, and the Commission launched a thorough study into ways and means of assuring ice travel with maximum safety. A month after the accident a stringent safety precautions code was issued, and in 1958 a table of ice thickness and loads was prepared. This was considered a stopgap method, and the search went on for more concrete safety procedures.

Engineer Jack Willmot of the Structural Research Department was given the project. He found little to work with in the line of prepared material, but managed to co-relate piecemeal information obtained from a great variety of sources. Data prepared by the United States, Russia, and Canada's National Research Council proved particularly helpful. And he eventually came up with something more tangible than a guide.

Working with technician Jack McKinnon, Mr. Willmot designed and produced a "safe ice load meter." Installed in a 9" by 12" metal box, the meter was built with simple radio-type components, and runs from a small battery.

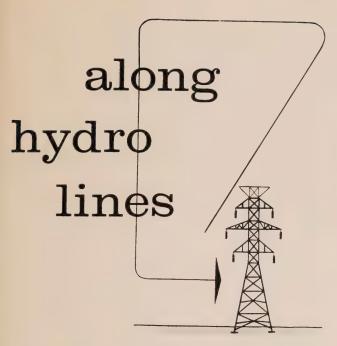
The meter's four control knobs are set to correspond with clear ice thickness in inches, white ice thickness, crack conditions and mild weather effects. A pointer then registers safe load in tons. The instrument provides a safety factor of not less than 2.0 compared to loads commonly applied in the lumber industry.

And field crews can get quick, accurate ice thickness readings with another of Mr. Willmot's inventions. He designed a motor-driven coring tool which whirs through ice up to four feet thick in a minute or two. It can be operated from a 12-volt vehicle battery, and provides ice cores $2\frac{1}{2}$ inches in diameter.

Drivers can obtain water depths readily by taking soundings through the core holes, but these would generally be taken in summer if the route of a particular ice road is known in advance.

Completing the ice safety package are tables indicating maximum speeds in relation to depth of water, a list of Ontario Hydro vehicle weights from a muskeg tractor at three tons to a Euclid at 28 tons, and emergency instructions for various crack conditions.

These are the tools, and it is intended that every Hydro section involved in ice travel have at least one person proficient in their use. Both the meter and the coring tool have seen extensive use at Little Long Rapids, and have come through with flying colors. Latest application has been testing for safe helicopter landing sites in connection with the construction of a transmission line from Manitouwadge to Hornepayne, where aircraft are being used extensively.



Hamilton Hydro Veterans Retire

In the words of a staff colleague, Edward Sharrett and Fred Thompson of the Hamilton Hydro-Electric System "lived, worked and breathed Hydro for a long time."

After serving 96 years—48 years each—with the Hamilton utility, they retired at the end of December last year.

Mr. Sharrett commenced his career as a junior clerk at the age of 16, and, after serving in various capacities, was appointed Manager of Collections in 1940, a position he held continuously until his recent retirement.



Edward Sharrett



Fred Thompson

Mr. Thompson joined the Hamilton staff about two weeks after Mr. Sharrett, and gradually advanced himself with the growing organization until he was appointed Supervisor of Billing in 1951. He held this position at the time of his retirement.

Indian Chief Heads Hydro

Competing in the Central Region curling bonspiel at Sutton recently, Ontario Hydro Chairman W. Ross Strike swept his way to a new title—Mah-Me-Ko-Zhe-Wa. That was the name bestowed on him by Chief Big Canoe in making him an honorary chief of the Georgina Island Ojibway band of Lake Simcoe. It means "Lucky Strike."

After placing the ceremonial headdress on Mr.

Strike, and smoking the traditional pipe of peace, Chief Big Canoe explained that the goodwill gesture was made in appreciation of the excellent electrical service provided by Ontario Hydro since the island reservation received power about five years ago.

Seaforth Joins 50 Year Ranks



Seaforth P.U.C. unveils plaque marking 50 years of Hydro. From left: Chairman Frank Kling; Rev. Donaldson; Mayor E. Daly; Commissioner D'Orlean Sills. R. J. Boussey is manager.

Fifty years have gone by since Seaforth first welcomed Hydro power from Niagara Falls.

The event caused the Huron Expositor to remark that the light being furnished was "nice, clear and steady". What particularly interested those concerned was the fact that energy, which originated over a hundred miles away, had been transported on a thin copper wire. The story went on to say: "Next to the telephone and the gramophone, it is one of the most wonderful achievements of modern skill and ingenuity."

To mark 50 years of Hydro, the Seaforth P.U.C. recently held open house and unveiled a bronze plaque mounted in the town hall. It bears the words: "Fifty years of Hydro-Electric service in Seaforth, erected in commemoration by the Public Utility Commission. It contains the names of the present commissioners and those of 50 years ago.

Only surviving member of the town council which brought Hydro to Seaforth is Dr. F. Harburn, 84, who recalls talking to Sir Adam Beck on two occasions. Reminiscing during a short program which followed the anniversary dinner, Dr. Harburn recalled the doubts which existed during the early years. "They would tell us that power would never get here—it would be worn out before it got to Kitchener. Others warned us bringing power from Niagara would kill all bird life in the country."

The soundness of Seaforth's early decision to join the Hydro movement is borne out by the records. In 1911, power costs at Seaforth averaged 8.6c per kwh. Today the average cost per kwh. for residential customers is 1.14c. The P.U.C.'s average monthly peak rose from 84 kilowatts in 1911 to 1845 kilowatts in 1961. In the same period, the number of customers rose from 293 to 885.

Miss Tena Harvey Retires at Perth

Public utility people in Eastern Ontario are noted for their long-service records. Outstanding in this respect was Miss Tena Harvey, secretary treasurer of Perth Public Utilities Commission, who retired in December, 1961, after 48 years' civic service.



Widely known throughout

the eastern section of the Province, she had been associated with Perth P.U.C. for 43 years. Prior to the formation of the Perth utility, she was employed by the Canadian Electric and Water Power Company, which handled power distribution in Perth before 1918.

During her lengthy career with Perth P.U.C., Miss Harvey served as acting manager for a year, being appointed secretary-treasurer eight years ago.

Marking her retirement, fellow employees recently presented her with an engraved wrist watch and corsage.

Toronto Hydro's "Civic Night"

When Toronto Hydro recently summed up the year's progress and its hopes for the future to city council and members of the press, it did so in the friendly atmosphere of a "Civic Night" dinner.



Now a regular feature of the utility's public relations program, the dinner provides a more intimate

setting in which management can meet informally with council, board of control, utility chairmen of the immediate area, and newspaper, radio and television representatives. The affair usually includes a "state of the union" message by the Toronto Hydro Chairman and an invitation to the guests to ask questions.

Chairman Bertram Merson is shown at left in the photograph with Controller Donald Summerville at this year's get-together.

One of the subjects discussed by Mr. Merson was underground distribution. He noted that "few, if any, cities our size on this continent have more underground installations than Toronto." He pointed out, however, that his utility was cognizant of the "tremendous costs" involved in replacing overhead distribution and of the effect these costs could have on rates and industry if they were not carefully watched.

municipal briefs

Rainy River P.U.C. has adopted a new system of customer billing for a trial period of one year, commencing January 1, 1962. Under this system, the first five months' billing will be based on the average of the past six months. On the sixth month, the meters will be read and adjustments made according to the reading at that time. The next five-month billing will be calculated similarly. Customers will be divided into six groups, and one group of meters read each month.

Toronto Township Hydro Chairman Elmer Wright learned details of day-to-day utility operation the hard way. He spent weekends answering telephone calls, reporting trouble, and dispatching crews for the 20-day duration of a recent strike of 35 linemen, operators, trouble workers and meter readers. Supervisory personnel maintained normal service. And, at the time of writing, 150 outside workers of Scarborough Township P.U.C. had just ended a 15-day strike. Service had been maintained by supervisory people.

Dutton Hydro System became a public utilities commission, January 1, 1962. It had previously been operated by committee in council. B. E. Downey was named first chairman, with Cyril Beill and M. Hoglund as commissioners.

Sarnia Hydro expects to spend \$400,900 in 1962, from funds estimated to become available, for equipment and improvements. This includes \$50,000 for water heater rental units, \$25,000 for street lighting, and \$75,500 for substation equipment.

The Regal Plaque on the nearly completed Woodstock P.U.C. building has caused some consternation. The plaque identifies the body as the Public Utility Commission, whereas P.U.C. trucks, stationery and the present office building are all identified in the plural. Woodstock commission Chairman H. R. Henderson believes the singular is technically correct. The Webster dictionary seems to back him up, defining utility in the singular and referring to the company providing services. The Public Utilities Act, Part 3, Section 40 (2) reads: "Where the construction of any other public utility works and the control and management of them is entrusted to any of the commissions mentioned in section 39, the commission thereafter shall be called 'The Public Utility Commission of the (naming the municipality) '.''

Toronto Board of Control has agreed that Toronto Hydro should have the job of heating the new city

hall and several nearby buildings. City Council approval is still necessary. Among the many suggestions for heating the building was one from a consulting engineer that heat pumps be used with the sewage system as a heat source. He said sewage is already heating plants in Switzerland, Sweden and Britain.

As the result of surveys, Acton Hydro found that only 57 local customers lacked hot water heaters of some kind, and that all but 64 of the 1,107 in use were electric heaters. In a similar survey, Preston P.U.C. discovered that only 59.5 per cent of local homes had electric water heaters while 92 per cent had TV sets. A door-to-door follow-up was conducted to pry householders away from their TV screens long enough to examine the quick-recovery water heaters now available.

London P.U.C. has completed a \$155,700 program of vault construction and transformer installations in the downtown area. More than 50 transformers in this section of the city now provide a satisfactory reserve for future growth. A. L. Furanna, assistant P.U.C. manager, finds that the ideal is to keep transformer capacity about 30 per cent above the peak load.

Welland Hydro has been offering a \$50 subsidy on new 100 ampere service installations and, after hearing a report on the extent to which the plan has increased the use of electricity, the commission will continue the plan—but with further stipulations. The subsidy will now be conditional upon the customer installing a major electrical appliance.

Personalities in the news include Chester G. Thomas. who has resigned after 14 years' continuous service on the Dunnville P.U.C.; Bruce Annand, appointed manager of Oshawa P.U.C., succeeding George Shreve; and Herbert F. Johnson, re-elected chairman of the Guelph Board of Light and Heat Commissioners. John T. Barnes was appointed chairman of Sarnia Hydro for the sixth time. Mr. Barnes was recently hospitalized as the result of a fall on an icy sidewalk.

Obituaries—Dr. Frederick Barron, a former mayor of Paris and chairman of the P.U.C., died recently. Active in O.M.E.A. affairs for many years, he was president of District 5 in 1952 and 1953. Arthur G. Bridge, a prominent and controversial figure in Stamford Township politics for half a century, died recently at Niagara Falls. He had been elected to Stamford Council 21 times, including eight consecutive years as reeve, during which time he was a member of the public utility commission. Robert Greer, an employee of Weston P.U.C. for 44 years, died recently in his 87th year. He had been an operator at the steam plant which supplied Weston with electric power prior to 1911, when the commission was formed.



Eugenia Returns to Normal

Construction of the new Eugenia power dam 30 miles southeast of Owen Sound has been completed by Ontario Hydro, and the reservoir is expected to return to normal levels following the spring freshet.

The original dam at Eugenia was built by Ontario Hydro, in 1915, to supply water to the Eugenia Generating Station on the Beaver River. Deterioration of the old concrete structure made replacement necessary.

Construction of a 1,200-foot earth dam around the old concrete structure began last August. The 100-foot-wide concrete spillway shown in the photograph controls the flow of water from the reservoir into the Beaver River.

The Department of Lands and Forests, which has already restocked the reservoir pond behind the dam, says it will be ready for fishing when the season opens this spring.

Meeting on Amalgamation

To ensure that the people of Northwestern Ontario are fully acquainted with the proposed amalgamation of the Ontario Hydro Systems, public meetings were held recently in Port Arthur and Atikokan by officials of the provincial government and Ontario Hydro.

The meetings were attended by Robert W. Macaulay, Minister of Economics and Development; E. H. Banks, Ontario Hydro's assistant general manager, Finance; and I. K. Sitzer, the Commission's assistant general manager, Production and Marketing.

The amalgamation proposal is now under consideration by the Legislature's special Committee on Energy.

The three power systems are now treated as separate accounts, with Ontario Hydro acting as trustee for the province in the operation of the Northwestern and Northeastern systems. While the Northwest is not interconnected electrically with Northeastern and

Southern Ontario, Ontario Hydro believes that the proposed amalgamation would result in more stable and predictable long-range rates. The enlarged financial entity would also better withstand changes in economic conditions and fluctuations in cost of operation caused by such factors as subnormal stream flows.

Meaford Chairman Ends Long Service



An outstanding record of service with Meaford Public Utilities Commission ended recently when Chairman E. Newton Cooper announced his retirement.

Mr. Cooper was a member of the Meaford Commission for 28 years, and he served for 22 consecutive years as chairman. He was also mayor of

the Georgian Bay municipality for four years.

During his term as P.U.C. chairman, a modern office, garage and warehouse were erected, and, in 1961, a new waterworks and filtration plant were built at a cost of nearly half a million dollars. These buildings are all electrically heated.

Mr. Cooper has also been active on the local hospital board, the Meaford Housing Board, and the Industrial Committee of the Meaford Chamber of Commerce. He is a director and vice-president of the Victoria and Grey Trust Company at the present time

In recognition of his services, a presentation was made at the final meeting of the 1961 commission.

Dean of P.U.C. Managers Retires

Charles A. Walters, dean of the province's municipal electrical utility managers, and the man who built Napanee's electrical distribution system more than 50 years ago, retired early this year.

Succeeding him is George Reid, a man who, himself, counts more than 25 years of experience with Napanee P.U.C.

Charlie Walters has been the guiding force behind Napanee's electrical destiny for longer than most residents can remember. A native of Napanee, he was selected by



Charles Walters



George Reid

the town fathers in 1904 to build a distribution system. Through 1916, when Napanee became a local

system, and 1929, when it received its first power from Ontario Hydro under a cost contract, Mr. Walters remained the key figure in the utility's operations.

During those formative years it was he, for example, who helped develop a rural electrical system, and, today, much of Lennox and Addington County owes its excellent service to his foresight and initiative.

Long a participant in the many activities of the Ontario Municipal Electric Association, Mr. Walters' agile mind and years of experience will be missed both at Napanee and by the Association. Now 83 years old, he retires to his handsome summer home on the Bay of Quinte's famous Long Reach.

Public Relations Officers Appointed

Public relations officers have been appointed to two more Ontario Hydro regions—East Central and Georgian Bay.

W. J. Ransom, public relations officer in the East Central Region, works out of Belleville. Since joining Hydro's newly-formed Frequency Standardization Division in 1949, he has held, among others, the positions of information supervisor, special assistant to the operations and material control engineer, and special assistant to the director. In 1959 he was appointed to the position of job analyst, and, a year later, joined the Information Division (now Public Relations).

Rory O'Donal, Georgian Bay Regional public relations officer, was a staff writer with Ontario Hydro's Information Division for nearly two years before his recent appointment. Born and educated in England, Mr. O'Donal worked for Lord Beaverbrook's newspaper chain before coming to Canada in 1956. He was editor of the Port Credit Weekly for two years before joining Ontario Hydro.

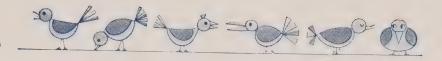
Iron Comes to the Gold Country

The economy of Northeastern Ontario received welcome stimulus with the recent announcement that a \$30 million iron ore development will be started this spring by the Jones & Laughlin Steel Corporation.

Located six miles southeast of Kirkland Lake, the project is expected to produce a million gross tons of the highest quality iron ore pellets annually for at least 30 years. It will be one of the largest magnetic taconite operations in Canada.

About 400 men will be employed at the mine and the associated agglomerating and concentrating plants. The pellets, containing 66 per cent iron, will be shipped entirely by rail to the Pittsburgh district, permitting year-round operations. It is expected that Ontario Hydro will provide the necessary electric power.

OFF THE WIRES



It was with profound regret that we learned of the death of Dr. A. A. Metcalfe, the grand old man of Almonte, just a few days after the January issue of Hydro News was published containing his profile on the occasion of his retirement. Dr. Metcalfe had been a member of the Almonte Hydro commission for 56 years, and we know of no municipal commissioner who can equal his length of service. The 92-year-old physician had been a pillar in local politics since the turn of the century, and still found time to administer to the medical requirements of a grateful community. And he assisted at the birth of some 3,000 citizens. It can truly be said of Dr. Metcalfe that his death ended a worthy chapter in the history of Almonte.

* * *

If awards are the criterion, 1961 will go down as a big year in the history of the Strike family. Ontario Hydro Chairman W. Ross Strike was recently named "Electrical Man of the Year" at a National Electrical Week dinner in Hamilton. The magazines making the award said he had given the lead to the entire electrical industry in spearheading a drive to promote the use of electric energy. Just a few days earlier, an Ottawa newspaper noted that Magistrate Glenn E. Strike, the Chairman's brother, had been named "Ottawa's Citizen of the Year" by a B'nai B'rith lodge. Glenn was cited for "communal activities and citizenship efforts." Community service seems to run in the family.

* * *

People who are asked to speak in public often take themselves too seriously. A good example of a man who refuses to leave his sense of humor behind when he mounts the public platform is the Rt. Hon. Viscount Amory, Britain's new High Commissioner to Canada. The following are a few example of the wit he displayed in a recent speech before the Canadian Manufacturers' Association:

"Our ancestors objected to taxation without representation. But, of course, they had not then experienced taxation with representation.

"I must not follow the example of the Irish judge who pledged himself to steer a middle course between partiality and impartiality.

"On this subject I must proceed as the porcupine is said to make love—very carefully."

On the strength of this performance, the High Commissioner is not likely to lack speaking engagements.

Congratulations to Amos Waites, chairman of the Mimico Public Utilities Commission, who recently completed 30 years of public service and is still going strong. A testimonial dinner was recently held in his honor at which more than 100 friends and associates in the Lakeshore and Toronto areas attended. Among the many tributes he received during the evening was one tendered by the renowned swimming coach, Gus Ryder. He presented Mr. Waites with a trophy emblematic of the "cigar-smoking swimming championship."

Man's inventive genius has led to the creation of mechanical marvels so efficient that they may eventually give us all an inferiority complex. And it was with some satisfaction that we read of the following farcical fumble in a despatch from London:

"An electricity substation

'somewhere in the provinces' broke down. A telephone robot's job when this happens is to dial operator and say: 'There is a fault at this power station. Please send repair men.'

"When the fault developed, the robot alertly dialled 'O' for operator. Nobody had told him the operator's number had been changed to '100.'

"So all he got was the second robot saying: 'You no longer dial 'O' for operator. Please replace your receiver and dial 100'."

They probably went on like that for hours and the idiocy of the performance should make us all feel better.

Scarborough Hydro has finally hired a secretary. In December, 1960, when the job was first created, Reeve Campbell said he doubted if one woman in 10 could handle the position. His remarks raised the hackles of women's groups all across Metro, and their protests were long and bitter. Oddly enough, all applicants for the job were men.

In his convocation address at Queen's University, the Hon. John Robarts, then Minister of Education, used this story to illustrate how only the uninformed dare to assert knowledge.

"The point is made very clear in the story of the professor of physics who asked one of his students, 'What is Electricity?' The student struggled with the question, 'I did know, but I forget.' The professor smote his brow and exclaimed: 'My God! The only man who ever knew what electricity is has forgotten'."

So we can go on chatting knowledgeably about amps and kilowatts without knowing exactly what we are talking about.

ONE



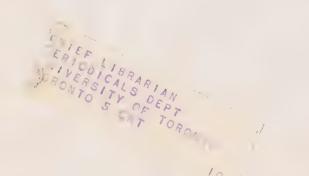
(Adaptation of an advertisement, mats of which are available to the associated municipal utilities for use in local promotions).

LIGHTWEIGHT ELECTRIC BLANKET

FOR NIGHT-LONG SLEEPING COMFORT

Lightweight, yes... but on the comfort scale, one electric blanket *outweighs* a stack of the ordinary kind! Electric blankets are thermostatically controlled to adjust to your personal sleeping comfort—no matter how the temperature may vary in your bedroom.

Choose your electric blanket from a range of pretty pastel colors . . . in single or double bed size, with single or double controls. It can be safely and easily washed in your washing machine. You'll find that an electric blanket is the best investment you ever made in a good night's sleep!



The Editor, ONTARIO HYDRO NEWS 620 University Ave., Toronto, Ontario

My address is incorrectly listed; please change it to:

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COMPANY

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TOWN or CITY

PROV.

Please return this, with your old or incorrect listing to The Editor.



ONTARIO

HYDRO NEWS

MARCH, 1962

ORRO MORA POR MARIA POR MA

In this issue:

Read about Ontario Hydro's fight against corrosion.

Other features include important messages from W. Ross Strike, the Commission's Chairman and J. M. Hambley the General Manager.



George Can't Do It Alone

The electrical industry is achieving a degree of co-operation in sales promotion hitherto unknown. "United We Sell," commencing on page 23, is the first of a two-part series intended to show (1) why the co-operative approach is being adopted, and (2) how it is being achieved. Peel Village is used to illustrate the "ripple" effect of a Medallion sale.



A Fight to the Finish

Millions of dollars of Ontario Hydro plant and equipment are exposed to the elements, and devising protection is a big job. "Corrosion vs. Ontario Hydro," commencing on page 4, describes the fight against this insidious foe. Photo, above, shows crew burying pipe samples in 1952. They will be dug up this year for evaluation.

MARCH, 1962 ONTARIO HYDRO NEWS

CONTENTS

- I Electrical Wednesday
- 4 Corrosion vs. Ontario Hydro
- 8 Roof-Top Jungles
- 23 United We Sell
- 26 Making Snow Go Electrically
- 27 Along Hydro Lines
- 33 Off-The-Wires

THE COVER

Our pock-marked cover is not an astronaut's view of the surface of the moon, but an actual photo of a metal plate exposed to the corrosive effects of the Ottawa River. Test specimens such as this are helping in the fight against corrosion. Fresh water slimes and the larvae of the caddis fly are among the corrosive influences at work against the Commission's underwater installations.

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It was
a special day
in a big week
for the
people of Hamilton.

One week each year the electrical industry speaks with a single voice to focus public attention on its contribution to the Canadian way of life. That is National Electrical Week, and one day is set aside for special attention. Thomas Edison's birthday becomes Electrical Day, and this year it was celebrated in Hamilton under the joint sponsorship of the Canadian Electrical Council and the Niagara District Electric Club.

"Electricity Powers Progress" was the theme, and any Hamiltonian who listened to the radio, turned on his television set, read the paper or strolled downtown could scarcely escape the message.

Outstanding among the attractions presented by a united industry were an electric milking parlor set up in a shopping centre, where urbanites could see for themselves how cows are related to the milk which appears at their doorstep each morning; an electrical hall of fame portraying progress in the design and manufacture of electrical goods over half a century; and a skating rink in the heart of downtown Hamilton illuminated with street lights ranging from early arc lamps to modern high-intensity luminaires.

Other Electrical Week features noticed about town included a

ELECTRICAL WEDNESDAY



This array of antique street lamps threw enough light for skaters in downtown Hamilton—and helped spotlight Electrical Week.

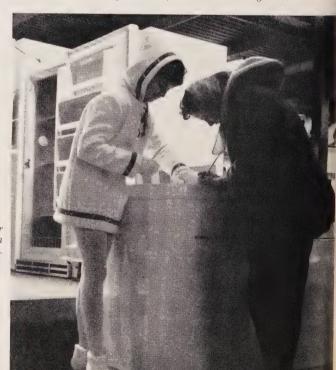
fashion show where the outdoor audience was kept warm with infra-red heat; an outdoor freezer display complete with "Eskimo", a model of the Douglas Point nuclear-electric project in a hotel lobby, and banners proclaiming the presence of Ontario Hydro's popular "Showtime." Representatives of all facets of the industry were in town for Electrical Day, attending meetings conducted by a dozen different associations. Many found time to visit the atomic research reactor at McMaster University, and to attend a civic reception. Several industrial concerns held open house. Leading figures in the industry presided at a spirited press conference, and the day was topped off with a gala banquet at which Robert W. Macaulay, Minister of Economics and Development, and Minister of Energy Resources, was guest speaker.



A hall of fame featuring the very old and very new in electrical equipment was assembled in a downtown shopping centre. Groups like this suggest the interest aroused by ingenious displays during Electrical Week.



This panel of industry leaders took part in a press conference on Electrical Day. Left to right are: Herbert Smith, President, Canadian General Electric; Thomas Edmunston, President, Ferranti-Packard; W. Ross Strike, Chairman, Ontario Hydro; W. D. Fallis, Manager, Manitoba Hydro; Kenneth Farthing and Douglas Marrs, Canadian Westinghouse.



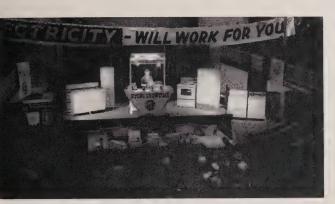
This pretty "Eskimo" presided at an outdoor freezer display set up by an enterprising Hamilton dealer. Her visitor is hopeful of winning a prize.



These people are availing themselves of free ice cream—served outdoors by a shirt-sleeved gentleman warmed by infra-red waves.



Hydro Chairman W. Ross Strike was named "Electrical Man of the Year". R. E. Bailey, President Canadian Electrical Council, makes presentation.



"Electricity will work for you," reads the banner, and Ontario Hydro home economists were on hand to explain how. "Showtime" draws crowds wherever it appears, and Hamilton was the locale during Electrical Week.





Proving once and for all to city folk that milk doesn't come pre-packaged, this milking parlor was set up at Greater Hamilton Shopping Centre. Crowds, left, watch proceedings from outside, while two milk maids, top, get a close-up view of electricity in action.

CORROSION vs ONTARIO HYDRO

Plant and equipment
valued at
millions of dollars
are at stake

by Adri Boudewyn





Biological organisms will penetrate heavy protective coatings to pit metal. Researcher, left, checks test specimens exposed for two years to Ottawa River water. Freshly-coated test rack, top, is lowered into forebay at Chats Falls Generating Station.

In suburbia, a housewife's temper reaches the boiling point as her guests note a reddish tinge to the drinking water. In rural Ontario a farmer swears at the tangled remains of some perfectly good wire he had stored outdoors. And, elsewhere in the province, a proud homeowner stares in horror at the dark streaks descending from each nailhead on the siding of his freshly painted house.

All are the victims of a common enemy—rust; an everyday form of corrosion that has cost homeowners, farmers, motorists and industry millions of dollars in preventive measures just to keep what they

own from quietly going down the drain.

But home-style corrosion is negligible compared with its effects on industry. Corrosion is probably the greatest single problem in maintaining plant and machinery in good operating condition over the long term. Every year corrosion eats greedily into the nation's dwindling mineral resources; interrupts vital production schedules; and causes a wide variety of accidents.

Moisture is the key element in most corrosion, and, whether it is in water or vapor form, the effect

is the same. But corrosion is not a new phenomena. Nearly 6,000 years ago the Egyptians were baffled by the same basic problems that face the housewife with kitchen utensils, the carpenter with his saw, and the rocket designer with space conquest at his fingertips.

Only in this century has corrosion been attacked with much success. Newly developed metals, paints and plastics are all proving effective. Yet science still knows surprisingly little about the corrosion process itself. It is a fundamental observation that iron, when exposed to water and oxygen, tends to revert to its natural, unrefined state—in other words, to corrode. And the process is recognized as an electrochemical reaction similar to what goes on in an electric cell.

But knowledge is scanty, and Ontario Hydro, with millions of dollars invested in plant and equipment, much of it exposed to the elements, has been in the forefront of the battle against corrosion for

many years.

As soon as a corrosion problem is discovered in any phase of the Commission's operations, efforts are made to determine the rate at which it is progressing. This is done by measuring the changes in thickness of the metal involved, against the time it has been exposed. Depending upon the replacement schedule for the afflicted equipment, it is sometimes cheaper to allow the corrosion to continue unchecked.

But in many instances action is essential, and Ontario Hydro has achieved some notable victories

in the fight against this insidious foe.

A case in point is the method adopted for prolonging the life of structural steel used in transmission line towers and outdoor steel structures at transformer and generating stations. Because of the Commission's enormous and growing investment in this type of structure, some form of cheap and durable protection is essential.

Paint was the form of protection employed on some of the earliest of these structures in Ontario, but the need for frequent repainting made this expensive. Conclusive tests and observations indicated that a galvanized coating provided a far more effective and economical method of protection, and most steel used in tower and outdoor station structures

in the last 50 years has been galvanized.

During the last decade, considerable research has been done on galvanized coatings, and improvements have been made both in the quality and uniformity of these coatings and methods of application. As they are made, these advances are incorporated into Ontario Hydro's engineering specifications to assure the highest level of performance, and to hold maintenance costs to a minimum.

The galvanizing has a sacrificial action—while not immune from corrosion itself, it protects the steel it encases. Experience has shown that the life of the original galvanized coating on a transmission line



Outdoor life tests to determine corrosion behaviour of metals and coatings are carried out by Ontario Hydro on these racks. Forty-two materials are presently under test in humid, rural and industrial atmospheres. It's a drawn-out process and cannot be hurried.



This is how one turbine looked after a few years' service. The problem of severe pitting caused by cavitation—the action of air bubbles against the blades—has been largely overcome by Ontario Hydro research.

tower will vary from 25 to 30 years in the rural areas, and from 10 to 15 years in industrialized centres. The tower is then painted with two coats of aluminum paint over a lead chromate primer.

Research presently underway suggests that a single application of a zinc paint may be the procedure of the future. Considering that there are some 30,000 steel towers in the Ontario Hydro system, even a small saving on each tower is important.

That paint remains a basic weapon in the anticorrosion arsenal is born out by the figures. Last year Ontario Hydro purchased more than 28,000 gallons of paint, at a cost of some \$90,000.

As one researcher put it, "buying paint is like buying insurance, you try to get as much protection as possible for the money." To this end, the Commission's research laboratories conduct continuing paint studies and tests to provide the data necessary for the selection or specification of the best materials for the particular job.

Underwater corrosion is another problem of particular concern to Ontario Hydro, since each hydraulic plant, and at some of the control dams associated with them, a large amount of metal is exposed to the water. Such components as control gates and trash racks are especially vulnerable to corrosion. Research presently underway, both in the laboratory and at field exposure sites, may ultimately produce a coating system having much greater resistance to corrosion and abrasion than those presently in use.

The Commission has already found a way to prolong the life of its valuable hydraulic turbines almost indefinitely. The chief problem here has been the severe pitting caused by cavitation—the action of vapor bubbles collapsing against the turbine blades under varying water pressure. It is not, strictly speaking, a corrosive action, but the results are equally devastating. In many cases, the use of stainless steel welded over the surfaces of the turbine runner proved to be the answer. This practice was pioneered by

Ontario Hydro almost 35 years ago, and has been progressively improved.

Corrosion also attacks underground, and it is in this sphere that the ever-growing variety of plastic material may prove most effective. Ontario Hydro engineers were among the first to use polyethylene piping to cool high voltage underground transmission lines, and plastics are likely to contribute more to cable protection as the trend toward underground distribution plant continues.

Other forms of corrosion call for an entirely different approach. Wherever water is a factor, minute electric currents are present, set up by the electrochemical reaction, and researchers can sometimes take advantage of this knowledge to turn the tables on corrosion.

By introducing a "foreign" or imposed current it may be possible to overcome the tendency of the metal to go into solution. In some hot water tanks, for example, a foreign current is provided by a magnesium anode, or rod, which itself corrodes, setting up the current necessary to overcome corrosion on the walls of the tank.

The same principle is employed to protect the steel pilings supporting the huge river crossing transmission line towers at Windsor and Sarnia. In this instance, magnesium rods are driven into the ground beside the pilings. And some of Ontario Hydro's steel-encased underground high voltage cables are protected by a direct current imposed on the cable from a regular 110 volt supply and rectifier. The current is fed into the ground by conductor rods.

Waged on many fronts, and with a wide and growing battery of weapons, Ontario Hydro's fight against corrosion continues unabated. Because corrosion is a natural process, the forces of nature are on the side of the enemy. But there is no sign of fatalism on the part of the researchers, and they will not be content with a draw.



Undercoating technique shows promise in fight against vehicle corrosion.

VEHICLES are just one of the many fronts on which Ontario Hydro is fighting corrosion, but this insidious enemy is the number one problem in fleet maintenance.

With all their engineering improvements, modern vehicles tend to rust out before they wear out. Five years ago a dealer would look at the motor of a car and make an offer. Today his first concern is the body.

Corrosion and body rusting drives thousands of Canadian vehicles off the roads and into the wrecker's graveyard each year. And to a fleet owner such as Ontario Hydro, corrosion represents a costly item in operating costs.

Last year, the Commission's 1,500 vehicles logged a total of 15 million miles. Widely dispersed about the province, and, therefore, exposed almost continuously to all kinds of weather, the vehicles are kept in service from three to eight years, depending on type and usage.

Corrosion or mechanical failure eventually ends their usefulness to Ontario Hydro. Because mechanical parts can be replaced, the Commission has been taking a close look at the corrosion element during the last few years.

An eight-man task group, headed by structural researcher B. A. Holmes, was formed, and its wideranging activities have included its

own research, on-the-job tests and

observations, and dozens of interviews with fleet owners and manufacturers. It has come up with some of the answers and sifted a lot of fact from fancy during the process.

Among the myths dispelled was one held by a so-called fleet expert who advanced the comfortable theory that laziness was the cure. He held that a layer of dirt over an auto offered protection against road salt during the winter months. Dirt, the researchers found, actually provided salt with a foothold from which it could commence its damaging sabotage.

The group looked more kindly on the procedure adopted by a small fleet owner who sprayed the under surface of his trucks with oil once a week. While oil attracts a lot of dust, it is an effective anticorrosive agent so long as it remains in place. But frequency of application ruled out this method where Ontario Hydro was concerned.

Among the results of the committee's investigations was the abandonment of the asphaltasbestos-clay undercoating previously used on Commission vehicles. Although inexpensive, it was found that this type of undercoating almost invariably formed cracks which allowed water and salt to reach the body metals and spread under the protective coating. After the water evaporated the salt

PROTECTING THE FLEET

remained, held in position to corrode by the undercoating.

After exhaustive studies and tests, the committee recommended the use of a rubber undercoating that could be sprayed on the underbody in the conventional manner. At \$36 per unit, the new undercoating is relatively expensive, but this cost may be low in comparison to the damage it prevents.

Two vehicles, a service truck and a line truck, were selected for the initial "in-service" field trials. The rubber-based undercoating was applied to each in January, 1959, and the vehicles were placed in service in the Georgian Bay Region.

Both trucks were inspected after one year. The service truck, with 25,000 miles behind it, was in excellent condition, as was the line truck, which had logged 10,000 miles. After two years of service, the undercoatings still stood up well, and the Transport and Work Equipment Section gave their stamp of approval.

More than 200 Commission vehicles have since been similarly undercoated, and this procedure is being followed wherever the economic life of the vehicle justifies the expense. Life expectancy is based on actuarial tables worked out by Commission experts for all types of vehicles.

While it is still too early to assess the real worth of the new undercoating in terms of dollars and cents, this phase of Ontario Hydro's research into corrosion promises to prolong the useful life of a good many expensive vehicles.

ROOF-TOP JUNGLES



These two photographs speak for themselves.
Otherwise neat suburb, top, is badly marred by forest
of individual T.V. antennae. Subdivision
at Clarkson, right, has community antennae system.

Aesthetically offensive,
our overhead forest of TV antennae
may fall beneath
the axe of progress.

by Joan Allen

Popularity breeds contempt, and this is certainly true of television antennae. Once a status symbol, they have fallen into disfavor by dint of sheer numbers.

Our roof-top battalions of metal scarecrows, often rusted and leaning grotesquely, are a leading community eyesore according to architects, community planners and anyone with an eye for the aesthetic.

But efforts are being made to control the rampant growth of our roof-top jungles, and whole subdivisions are being planned with a post-T.V. skyline—close-shaved.

With one or more giant towers set up on a high point of land in or near a community, T.V. signals can be piped-in to subscribers' homes over cable strung on either Hydro or telephone poles. These community antenna systems are gaining acceptance in Canada, particularly in British Columbia and Quebec, where many viewers reside in fringe reception areas.

Consistently strong reception from a variety of stations with no local interference is as strong a selling point for individual subscribers to a community antenna system as the appeal of an unbroken roof line.

And, from the electrical utility's viewpoint, re-



moval of roof-top antennae eliminates a potential danger to its distribution system and to the life and property of its customers. T.V. aerials which are blown down across distribution or transmission lines—usually because of improper installations—endanger the lives of the homeowners, usually cause damage to the T.V. receiver and household wiring, and frequently interrupt electrical service in the area.

The Canadian Electrical Association has, from time to time, issued warnings to this effect. A 1955 amendment by the House of Commons to the Radio Act permits municipalities to apply for authorization to enforce certain general specifications covering the installation of T.V. antennae and to incorporate additional non-conflicting specifications in local by-laws.

Safety was one of the factors which prompted the city of Guelph to become a pioneer in the field of community antenna systems. Nine years ago, a group of local business men, who felt that a giant antenna would solve the problem of inadequate television reception in Guelph, approached the Guelph Board of Light and Heat Commissioners with their idea.

"At first the Board was violently opposed to the whole concept," says A. G. Stacey, general manager

and chief engineer. "We were afraid that if something happened to the original company after a number of installations had been made, the onus of maintaining the service would fall, by default, to the Board."

Because community antenna systems were a relatively new idea, very little information based on actual experience was available for Guelph's guidance.

As Mr. Stacey puts it: "We had to do most of the fumbling for ourselves. But the Board eventually did agree to co-operate, provided that the company would rent our poles for stringing their cables, rather than setting up their own, and provided that all installations be subject to our inspection and supervision.

"The fact that the system was to be operated by local business men influenced the Board in its decision. The Board itself was interested in the antenna system mainly as a service to its customers, and we felt that, if we co-operated, the group could provide this service more efficiently and economically," he said.

Another factor in the favor of such a system is the nearly \$10,000 a year the Guelph Board receives

UNDERGROUND DISTRIBUTION

There are few who would argue that the overhead distribution facilities maintained by the electrical utilities are an attractive facet of the municipal landscape. Unfortunately, their removal involves a great deal more than is generally realized by the layman.

The clamor for underground distribution by an uninformed public was recognized in a recent talk by H. F. Beique, President of the Canadian Electrical Association, at the Eastern Zone conference in Niagara Falls. He said:

"Groups of people more devoted than others to aesthetic values, such as architects and town-planners, repeatedly suggest that all conductors should be placed underground.

"Travellers very often will come back with the impression that in Europe most lines are underground, and often make public statements to the effect that the Canadian utilities should do likewise.

"It seems to me, however, that, in such instances, opinions are voiced by people incompletely informed on the subject, with the result that the public is left confused and a poor image of the industry is formed."

Mr. Beique went on to say:

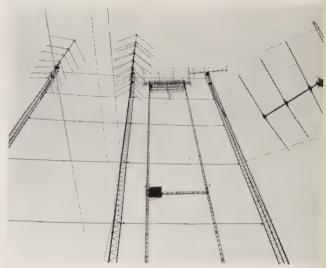
"What the public does not generally know are the drawbacks of underground, such as its high cost, the necessity of duplicate feed, the large investments required a long time in advance, the need for co-ordinated construction, etc.

"The public is completely ignorant of the fact that the cost ratio between underground and overhead residential distribution runs between two and three to one, and downtown may run up to a cost ratio of ten to one."

He noted that this could have considerable effect on electrical rates.

The speaker announced that a spring symposium would be held by the C.E.A. on underground distribution to gather facts and throw more light on the subject.

"It would indicate possible solutions and, in general, help to inform the public; for it should be known that utility executives and employees are just as concerned with aesthetic values as all other good Canadian citizens."



Guelph is a pioneer in the field of community T.V. antennae. Cleared and amplified signals are piped into some 2,000 homes from these 200-foot towers located on highest land in city.

from Neighborhood Television Ltd. for pole rentals and amplifiers.

To pick up the maximum available signal from seven T.V. stations, the Company installed two 200-foot towers on the highest land in the city. The signal is fed through heavy co-axial cable to the electronic plant, where the picture passes through interference traps, pre-amplifiers, converters, automatic gain control amplifiers and balancers. From the antenna site, the cleared, amplified signal is piped-in to the homes of some 4,000 subscribers in many sections of the city.

The basic installation charge to the customer is \$10.00 and there is a monthly charge of \$3.75 which provides for continuous maintenance.

Similar community antenna systems are developing in various other Ontario centres, including Metropolitan Toronto, where a system is being used in Etobicoke as an experiment for closed-circuit entertainment, on a pay-as-you-see basis. While many of these central systems have been constructed with a view to enhancing the sales appeal of new subdivisions, others, as in Guelph, also serve longestablished areas.

From the aesthetic point of view, community planners would like to see electrical distribution systems and telephone wires join T.V. antennae in the disappearing act. And, in several new subdivisions throughout Ontario, all cables are buried in a common trench. Not a pole or a wire or a T.V. antenna remains to offend the suburban eye.

Economics will decide the rate of progress, but, in the communities of the future, the T.V. antennae may regain their standing as a status symbol—this time by their very conspicuous absence.

OF SPECIAL INTEREST TO READERS

Reprinted on the following pages are addresses delivered recently by W. Ross Strike, Q.C., Chairman, and J. M. Hambley, General Manager of Ontario

Hydro.

While these addresses were prepared for, and delivered at, the 53rd joint annual meeting of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities of Ontario, the Editor feels that the material they contain will be of genuine interest to readers of the magazine.

Address by W. ROSS STRIKE Q.C.

Chairman, Ontario Hydro

On March 6, 1962 to the 53rd Joint Meeting

Ontario Municipal Electric Association

and

Association of Municipal Electrical Utilities

of Ontario

A THE outset, I want to state that I feel very honored and even more humble in addressing you for the first time as Chairman of Ontario Hydro. Let me say right here, as forcibly and as sincerely as I can, that I have never at any time considered this appointment to have reflected any qualifications of my own, but rather to be the sum total of all the qualifications of the host of dedicated people who have worked unselfishly through the years to make this association the responsible, efficient, co-operative and wide-awake organization it has become as it has met its problems one by one and solved them. Very truly and beyond any doubt we have through the years become Partners in Power.

I now propose to prove this to you, who I am sure will require no advocacy of mine to confirm it. However, we should put it on the record so that others, who have either forgotten the origins and growth of this organization or for many valid reasons have never known them, may learn of how these organizations which are completely indigenous to the Province of Ontario have developed their own unique way to a leading place in the electrical utility field of the world.

The people of this province, especially, should never forget that this Hydro organization started during the infancy of the use of electric energy in its application

to the general economy in factory, commercial establishments and the home. There was no charted course to follow; no developed techniques to adopt nor designs to accept. Every problem had to be met when encountered and solved with imagination, initiative and determination. The sturdy pioneer spirit of self-reliance and dogged perseverance has come through time after time.

It is a matter of undisputed historical fact that The Hydro Electric Power Commission of Ontario originated as a municipal movement — championed by Boards of Trade and manufacturers. Its supporters were city councillors, legislative members, business men and consumers of electric power. In general, none of these had ambitious political aims. Their prime concern was to obtain reliable, low-cost power in adequate quantities — nothing more.

Their actual experience to date established a strong belief that their objective could not be accomplished in full measure by allowing the production, transmission and distribution of electric energy to be concentrated in the hands of privately-owned companies, who were then both greedy and capricious.

They believed just as strongly that it could not be achieved by municipallyowned plants operating independently and unco-ordinated.

T WAS abundantly clear that Niagara Falls was a source of power too large and too distant for a single municipality to develop. Indeed it was then a widespread belief that Niagara Falls was a source of power that could never be consumed in Ontario alone.

These people did believe very strongly, however, that what could not be done separately could be accomplished by an association of municipalities with common interests entrusted to a publicly-created central supply organization.

The Provincial Government had no desire to get into the electrical business and set up a department to run it. The future of electric energy was then enveloped in heavy mists of uncertainty and doubt and there was strong protest from both men of distinction and influential newspapers that this mad scheme would bankrupt the Province if undertaken in this fashion.

The need was great, the proponents were not to be daunted by fears, doubts and scepticism, and they believed so much in their cause that the municipalities undertook to meet the full cost of the undertaking in their rates and signed contracts for that purpose.

They knew that in unity there is strength, but they were aware too of the problems that confront a group of municipalities in uniting in a large co-operative undertaking; the suspicion as to one another's aims; the parochial viewpoint of many municipalities; the difficulties encountered by councillors and commissioners in securing re-election unless able to convince voters that their first and only concern is for their own community and its special interests. No one knew better than they that the road of municipal co-operation in a joint undertaking is perilous and difficult.

It is to the everlasting credit of the people of this Province that these obstacles were surmounted by the application of sound common sense and public and private integrity and the exercise of the true principles of co-operation in providing the greatest good for the greatest numbers.

WE NEED not dwell here on the many meetings, the resolutions, the petitions, the great parades and the innumerable thrilling and inspiring speeches that were made by men who had both the vision and the will to make them come to pass.

In all fairness, we should give credit to the Government of the day and the many members of the legislature of both parties who were persuaded to prepare and pass legislation on a unique concept for the development and distribution of electric energy.

The legislation was based on a fundamental principle that has stood the test of time and has been the source of our greatest strength and stability. This same principle has been acclaimed and commended by every group, and they are legion, who have come to study this organization from other lands — despite the fact that most of them shake their heads sadly and state in their country it would be very difficult to keep greedy fingers out of the pie.

This basic principle is that the Provincial Commission by legislation is created a body corporate with full legal powers to carry on the business of developing and

transmitting power everywhere in the Province. Its financing is made self-sustaining, and all the revenues are kept in the business.

Parallel legislation also carried this principle to the municipalities where local commissions are, by statute, given all the powers of the municipal corporation to carry on the business of distributing and providing electric energy to its customers, and again the revenues can be used only for the purposes of the local utility.

There are certain statutory limitations in both instances, but these do not affect the originally-accepted and since rigidly-followed principle of two parts:

- (a) All revenues of both provincial and local commissions have been used solely in the business and no taxes have been levied either by the Province or by a municipality to support either of these commissions.
- (b) It was recognized by our founders and strongly confirmed through the years that the generation, transmission, and distribution of electric energy is a highly technical business. It requires the employment of many professional and skilled people, not only capable and efficient in the ever-expanding electrical field, but also in the administration, accounting and financing at both the provincial and municipal levels of a very large business organization.

To be efficient, it must be flexible, and empowered to exercise all the functions of a corporate entity in the same fashion as any other business applies the best practices in carrying out its particular purpose.

It should never be exposed to political pressures, spelled with either a large or small "p", which will, in any way, interfere with the exercise of its corporate functions in the conduct and administration of its affairs.

These principles were recognized by our founders and written into the enabling legislation for both the provincial and municipal commissions.

THE other basic principle upon which our whole concept is built is the sinking fund provision, which squarely vests the equity in the system in the co-operating municipalities in proportion to the amount they are charged annually in their power cost for sinking fund. These charges are made each year for 40 years. But, in the 41st year, the municipality is given a credit in its cost of power of the amount it paid for sinking fund in the first year of its contract, improved by an interest rate of 4 per cent annually for the 40 years. This procedure is carried on each year thereafter for each municipality whose contract has been in existence for 40 years, and these are becoming more and more numerous each year. These credits will continue to be a very important factor in our efforts to maintain stable rates in the face of rising costs.

Now having defined our fundamentals, how have we, as partners, lived up to the hopes, aspirations and convictions of our founders?

Has the provincial commission fulfilled its purpose of producing efficiently low cost power for its customers? Have the municipalities met the challenges and the problems of an expanding economy and electrical system by showing responsibility and intelligent action in their decisions designed to carry out the basic co-operative principles of our organization? Or, have they been parochial in their approach, always thinking only of their own interests and generally acting as small calibre operators with no vision of long-term objectives?

Well, the record is there to be read. It appears in many forms. The annual reports indicate it statistically. The minutes of both the O.M.E.A. and A.M.E.U. record it faithfully and at some length. You can find it in narrative form in several books. But, the printed word never tells the full story. The decisions are recorded, the results are tabulated, but seldom do they reveal the strenuous preparation, the presentation, the arguments, the personalities involved, the criticism both constructive and destructive, the pleas for the *status quo* and for change in the face of growth and new circumstances.

FOR THOSE of us who have lived through these periods of transition, it has been a tremendous experience. One of the most remarkable and revealing things to me has been the indisputable fact that no matter how bitter the debate, nor cockeyed, to some, the arguments of others, nor the suspicion of log-rolling or behind-the-scenes manipulation, was there ever any suspicion of selfish motives, dishonesty or insincerity attributed to anyone. It has been proven beyond a doubt that men of goodwill, sincerity of purpose, dedication and personal integrity can make decisions based on the best

information available on the problem, and retain the respect and the abiding friendship of each other.

Over the past 18 years, these decisions have been crowding in upon us with some frequency for the very reason that the economy of our Province has been expanding at a terrific rate, and we were right in the middle of it.

I propose to record a few of these, but my comments must be brief. I will start with March, 1944, when we directed the provincial commission to levy five cents per horsepower in the cost of power to all municipal loads for the purpose of establishing a reserve for maintaining a maximum of \$39.00 per h.p. for any municipality. This cost some municipalities a considerable sum, but it was a completely O.M.E.A.-inspired resolution, and did not meet with much opposition when some large municipalities agreed with and helped sponsor it. I think it is valid to observe that this was a straw in the wind of greater and far more important decisions in the future.

NEXT came the proposal in 1944 to amalgamate the Niagara, Eastern and Georgian Bay districts into one Southern Ontario System. This was inevitable, if an efficient integrated power grid was to be established, with Quebec Power contracts renewed and the Ottawa River developments underway. However, this was a distinct departure from sectional loyalties and some areas of competition in rates and long-held local ideas as to benefits to be derived from adjacent power sites. These engendered considerable debate and discussions and, of course, "viewing with alarm" as well as a few accusations of "being sold down the river". All of this called for the production of all the best information available and capable leadership in all sections. To the credit of the opposition, this proposal was finally accepted almost unanimously, and another milestone passed in a great co-operative movement "hell-bent" for efficiency, the best service and low-cost power for the people of the Province.

Hard upon the heels of the Southern Ontario amalgamation came the grand-daddy of them all. No problem through the years in this organization had been side-stepped, postponed, pushed aside and just caused sheer funk more often than this one of frequency standardization. It was the big league decision that separated the men from the boys. It was full of controversy, opposing engineering opinions and divided expert advice. It lent itself to reams of what seemed endless reports and exhaustive explanations, forecasts and estimates. It was a paradise in which the argumentative, the opinionated, the prejudiced, the reasonable and the unreasonable person could wander in delight and never fail to pluck some sweet-tasting fruit about which he could proclaim and tempt his neighbours. (I hasten to assure you there is no reference whatsoever intended to the Garden of Eden and its performers.) However, the inevitable procedures were followed. Reports were compiled. Estimates were made, together with assessments of load growth, and reports and plans produced for carrying out this really complicated task of frequency changeover.

TO THE credit of these two associations, let it be recorded with pride, that groups of men in both associations, who had nothing to gain and much to lose in a very great sacrifice of time from their already crowded days and nights, were prepared to spend days and weeks and months in first trying to fully understand and appreciate all the principles and implications involved, and then to give unselfish leadership in bringing these two associations to a decision.

Let us not forget that this decision was made by the people in these associations who had the knowledge and the experience primarily of the administration and function of the local utilities, and who knew that the brunt of the practical effect of this change-over on their customers would be their pigeon — either dead or alive.

It has already been indicated that all was not peace and light in all of these deliberations. In the type of democracy we practice and especially in a problem of this complexity and magnitude, it is not probable nor even possible. But, again in spite of some bitter, some taunting, some sarcastic and some humorous and many statesmanlike remarks at the many meetings and discussions, no friendships were broken and no man's honor, motives nor reputation was impugned by even a lifted eyebrow. The vote of the majority was accepted. Ranks were closed and we marched in step to the next encounter.

Hindsight can be very comforting and it can be a torment. I have never been more thankful and grateful, when I reflect, for the wise, prudent and reasonable men

who wrestled hard and long, and then came to the decision that sparked this Province

both figuratively and practically to its greatest growth.

If we had decided otherwise or even postponed it, there would have been chaos, confusion and chagrin in our ranks for a long time. Without a standard frequency, it would have been a shambles.

Again, just skimming the high spots, I remember another decision that continues to establish the proof of our responsiveness to the welfare of the Province and our

responsibility as corporate entities.

As our grid has continued to expand and our pooling of costs for various functions has progressed, it was suggested by some direct primary customers that it was not fair if they did not receive their sinking fund credits which, until 1960, had been included as a municipal credit, on some sort of similar basis as the municipal credits were established.

THIS proposal was considered by the O.M.E.A. executive in the light of the changing economic climate and the pressing need of our industries to be given every reasonable assistance to meet competition at home and abroad. It was also reasonable that these direct customers, who for 40 years had been assessed for sinking fund, be entitled to some benefit directly or indirectly.

It was agreed that the executive would process it through O.M.E.A. channels to its membership and that the proposed formulae set up by Ontario Hydro to implement

the request of these customers be considered.

There were some desultory objections to this, but explanations were made and accepted. The application of this sinking fund relief to these direct customers is to be used as a special reserve and as a cushion to absorb the fluctuations in costs of the five-year contract to be offered these customers and which will benefit them considerably.

This undoubtedly was a responsible action by the municipalities to meet a reasonable proposal of the companies concerned to bring them into line with the same benefits received indirectly by other companies served by the municipalities.

Then we come to another and our own most recent major decision—to amalgamate the Southern and Northern systems as one financial entity. To those of us who through the years have been familiar with the expansion of our grid and the integration of our hydraulic and thermal developments, this proposal was inevitable, and it was just a matter of timing if we were to use the inherent economic advantages that were present.

As our studies progressed and our further plans for integration of the North-eastern and Southern physical systems became more firm, it was obvious that taking into account all the factors involved, 1962 would be the right time with the least effect on the costs to our customers and to be fair to all parts of Ontario and especially the physically unconnected system in the Northwest which obviously needed relief from the inherent abnormal swings in its load characteristics due to its primary industry.

NCE again, the utmost co-operation was received from these associations in the preparation and presentation of all relevant material. When it was made evident that some speed was required, there was no hesitation in calling special meetings in all the districts.

Those in positions of leadership again gave many hours, not only to the routine of organizing the meetings, but in the studying of briefs and material as did a great many of the rank and file.

The district meetings were not rubber-stamp affairs. Those attending were vitally interested in the consideration of all the factors involved, both immediate and long-term. They watched that no undue discrimination was made against their municipality, their district, or their system. But, they also were vitally interested in the immediate and future growth of the Province and how best all our customers could be supplied with electric energy at the lowest rates. Again, the democratic process was duly honored and practised with vigor and dexterity and the large majority decision accepted with no loss of respect or consideration for the other fellow.

To the outsider, who may follow this narrative, it may appear that it is all too pat and fluffy to be real. I have never been too successful in explaining to those outside "the pale" the magic of the influences that play upon those on the inside.

Like all of you, I have been exposed to some extent to personalities involved

in a good many organizations. We must admit that we have our full share of these in our organization and they generally react according to form, except that they never seem to work up to a full head of steam. This may happen because they are not maliciously goaded, but treated with tolerance and some good humor by their friends. In any event, criticism is generally constructive; rarely are there selfish motives and the interest is always directed to the general good. Then, there are always one's friends—ever ready to cut you down to size just for your own good.

I will always maintain that the Hydro organization especially attracts people who are looking for a worthwhile opportunity to serve. This has been so from its inception. It includes some admirable and distinguished persons down through the years and is one of the chief reasons we have so many long service people throughout

our whole organization.

There has been no effort in this narrative to mention the remarkable upsurge in activity in our associations in the last 15 years; the almost innumerable groups set up in the A.M.E.U., with assistance from the provincial commission for research, to develop standards, to improve techniques and generally to give management much better tools to do the full job and which are making this a top-flight organization, and recognized as such throughout the industry.

THE O.M.E.A. is not resting on its past achievements. Full marks must be given to the many commissioners who are giving very generously of their time in organizing and following up in load promotion and public relations programs for the utilities and generally tuning up the local commissioners. These activities are gaining in momentum, and are designed to enable the commissioners to keep pace and pull their full share of the load with management. This is most important and essential.

With complete certainty, I suggest to you that at no time in the history of Hydro have more people been working harder or with more dedication to give the people of this Province the best service an electrical utility can give to its customers.

I can also state without reservation, that every time the chips were down, and the issue was on the line, the correct decision, based on the best information available, co-operation and in the best interest of all, has been made by these associations. To their everlasting credit, they have lived up to the faith placed in them by the founders of Hydro in Ontario.

We have not faced the last problem. Nor have we solved all our present problems. But, we need not be dismayed. We have only to continue to be content with only the best and to always remember that the organization which ceases to grow, just as surely begins to die.

Address by

J. M. HAMBLEY

General Manager, Ontario Hydro

On March 5, 1962 to the 53rd Annual Meeting

Association of Municipal Electrical Utilities

of Ontario

AT THE outset of my remarks, allow me to offer to the other members of the A.M.E.U. — on behalf of myself and my colleagues at Ontario Hydro — our sincere congratulations for the commendable eagerness which you continue to display in meeting many new challenges and problems.

Ample evidence of this is found in the large number of committees which you have formed to develop new methods, and to study the latest techniques of providing a

high calibre of electrical service to your customers.

The achievements of these committees are reflected in our present-day operations in numerous important ways, and deserve no small part of the credit for the rather enviable reputation we enjoy among other electrical utilities throughout the world.

The ever-widening scope of your activities is evident in your annual summer seminars and workshop sessions. These provide gratifying proof that municipal utility management in this Province is keeping abreast of the latest developments in both the technical and administrative fields, including the complex and vital area of employee relations.

Last year the slogan of this annual gathering was "Crown 1961 with Success", and a review of your accomplishments of the past year will provide ample proof that you have fulfilled this objective.

AM sure you share with me the view that one of the great events of 1961, insofar as the cause of Hydro in Ontario is concerned, was the appointment of Ross Strike as our ninth Chairman. Of course, since he is my boss, any words of praise I might have for him are liable to be suspect. I am willing to take this risk, however, for I am confident we all recognize our good fortune in having Mr. Strike at the helm where his broad experience in the electrical utility field, and his intimate knowledge of the Hydro organization, are invaluable in guiding us through this rather difficult period in our history.

May I say that our entire staff regards him with honor, respect, and indeed affection. We hope that the years ahead will give him new cause for pride and satisfaction in the office which he now holds, and for which he is so manifestly well fitted.

While it is true that the Commission's total power requirements last year were up only 3.5 per cent over 1960, I think it is worth noting that the peak demands of Ontario Hydro have grown from 4,000 kilowatts in 1910—the first year of active operations—to 5.9 million kilowatts last year.

And although 1961 cannot be considered a record year in the amount of new generating capacity which became available, we did bring into service a total of 606,000 kilowatts, which I suggest represents a creditable measure of achievement.

Particularly significant is the fact that the greater proportion of the new capacity

installed last year was thermal rather than hydraulic generation.

The present year will be historic in Canadian electrical annals, for it will witness the inauguration of the nation's first nuclear-electric plant. Although comparatively modest in size, the Nuclear Demonstration Plant on the Ottawa River is expected to

provide vitally important operating, design, and cost information which will be of assistance in determining the future course of nuclear-electric power development in our system.

Other power sources coming into service this year will be the second 300,000-kilowatt unit at Lakeview Generating Station west of Toronto, and a 100,000-kilowatt unit at the Thunder Bay Generating Station at Fort William. This latter will be Hydro's first major thermal-electric power station beyond the boundaries of the Southern Ontario System.

Under the Commission's present capital construction program, 2.3 million kilowatts will be added to its resources by the end of 1966. This will be accomplished by continuing the development of hydraulic resources, speeding up the tempo of its conventional thermal construction, and further exploring the potential of nuclear-electric generation.

You are, of course, aware that Ontario Hydro is acting as construction agent for Atomic Energy of Canada Limited in the building of the new Douglas Point Nuclear Power Station on Lake Huron — between Port Elgin and Kincardine. This is Canada's first full-scale nuclear plant; and when completed it will be the largest of its type in the world. Hydro will operate the 200,000-kilowatt plant when it comes into service in 1965, and will feed its output into the Commission's transmission network.

AT THE Otter Rapids Station, 93 miles north of Cochrane, two more units will be added by 1963, giving the plant a capacity of 172,000 kilowatts. Provision has also been made for the possible installation of four additional units at a later date.

Close by, on the Mattagami River, Hydro is building Little Long Generating Station — the first of three developments authorized on this river, which, in total, will add 365,000 kilowatts to its hydraulic resources by 1966. Little Long itself is scheduled for operation in 1963.

Some of the power from our Otter Rapids station and the remote Mattagami River sites will be carried to Southern Ontario — a distance of over 400 miles — by Hydro's first extra-high-voltage (EVH) line.

The first stage, to Sudbury, to serve the surrounding load centres, is scheduled for completion by 1963. Eventually, the 460,000-volt line, with about four times the carrying capacity of an existing 230,000-volt transmission line, will extend to the Toronto area.

Let me apologize for the use of so many statistics; but it was my hope that they might serve to illustrate that our progress, in the past few years, has been reasonably satisfactory. In fact, I suggest that the growth of both the provincial and municipal systems has already far exceeded the expectations of those who laid the foundations of the Hydro organization over a half-century ago. For example: I doubt that even Sir Adam Beck, in his most optimistic moments, ever anticipated that the combined assets of Ontario Hydro and the 354 associated municipal electrical utilities would ever reach a total of over \$3 billion; or that the Commission and the municipal systems would, some day, serve a total of approximately 2 million customers: that the infant Hydro system would ever expand to embrace an area of some 250,000 square miles, the largest service area of any electrical utility in the Western Hemisphere.

But today, these things are all realities.

I often feel that we spend too little time and effort in directing our customers' attention to the fact that electrical rates in Ontario are among the lowest in the world; and that there are few, if any, commodities as reasonably priced as electric energy. Recent figures show that, on the average, a kilowatt-hour of energy costs an Ontario householder only 1.34 cents, as compared for example with an average rate of 2.5 cents in the United States.

T HAS been recently estimated that during the past year, the average cost per kilowatt-hour to an Ontario farmer — despite the low customer density per mile of line — was only 1.95 cents. During the same period, the average cost per kilowatt-hour to a residential customer supplied by the municipal system (where of course the capital outlay per customer is much lower) was only 1.14 cents.

It is worth noting, too, that in terms of constant dollars, the average cost per kilowatt-hour in all principal services (municipal and Ontario Hydro combined) is well below the average cost in 1940. A recent survey indicates that in 1960 the average cost

per kilowatt-hour for various types of service ranged between 39 and 62 per cent of what it would have been if it had followed general price changes from 1940 on.

Nevertheless, I am sure we all acknowledge that we cannot afford the luxury of indulging in smug or complacent attitudes at this point in our history. In fact, I think we must resolutely and unanimously face the harsh fact that we are operating in a tough league these days.

Faced with intense competition from other sources of energy, we are also confronted with the inflationary pressures exerted by such factors as higher interest charges, higher wage rates, advances in material costs, and higher taxes.

Whenever we have the temerity to suggest that, since our customers represent our only source of revenue, these cost increases must be compensated for by raising rates, we become the target for severe criticism from many quarters.

Much of this criticism comes from industry, which, being subjected to the same inflationary pressures as we are, might be expected to be more understanding. However, although the complaints may seem illogical to us at times, we must recognize that industry, and especially our manufacturing industry, is in a very difficult position these days. In addition to coping with the same factors that tend to increase production costs as we must, a large segment of our industrial complex is facing determined competition from some nations which, only a few years ago, were among Canada's best customers. Such countries as Great Britain, West Germany and Japan, which have certain inherent cost advantages, are not only successfully competing against our industry in foreign markets, but are also selling their goods in the Canadian market — at prices which our industries cannot meet.

THUS, our manufacturing and business executives are fighting with their backs to the wall in their efforts to devise effective methods of reducing costs, or at least of preventing costs from rising.

About 36 per cent of all energy made available by Ontario Hydro goes in wholesale quantities directly to industrial customers and interconnected systems. About 56 per cent is bought by municipal utilities for resale to both domestic and industrial customers. The remaining eight per cent is retailed to rural customers by the Commission.

The ability of both Ontario Hydro and the associated municipal systems to continue to supply sufficient low-cost electric energy, will have a large bearing on the future industrial activity in the Province; and, conversely, future industrial activity will, to a large degree, dictate our ability to continue to supply energy at a reasonable rate. In other words, the electrical utilities and the industrial producers of Ontario are extremely interdependent.

If we are to be successful in maintaining our rates reasonably constant, we must be careful not to underestimate the effect of competition from other forms of energy. While competition serves to bring about a healthy business climate, it also means that those who have the responsibility of operating our electrical systems must take a long, hard look at the economic facts of life.

UDGING by past performance, I have no doubt that the members of the A.M.E.U. are quite equal to the challenge which these changing conditions present to utility management. But I think you will agree that we are faced with a situation which calls for some real managerial statesmanship.

I suggest to you that the strictest measures of cost control, imaginative development of new cost-reducing measures, and vigorous pursuit of every possible additional kilowatt-hour in energy sales are some of the avenues we must pursue.

While we have made significant progress in the improvement of production per man-hour in the past few years, it is my feeling that there is still room for considerable improvement in this direction. Although there is a continuing need for utilities to recognize their responsibilities to their employees, there is also an equal need for a reawakened appreciation among utility employees of the responsibility they have towards their employer.

While I do not for a moment suggest that we should abandon the idea of increasing job satisfaction, should we not be placing equal if not even more stress on the importance of more efficient job performance?

As an example of the importance which Ontario Hydro attaches to this aspect

of utility operation, I should like to point out that our management people are continually striving to introduce performance standards in new areas, and to improve present standards.

By comparing actual achievement with recognized norms, all members of the staff can measure their particular efficiency, and the supervisors can concentrate on those situations that obviously require improvement, if economic operation is to be maintained.

In this connection, I think it is of interest to mention that performance standards in our forestry and line maintenance work have now been in use with excellent success for several years. During 1961, standards were developed for electrical and mechanical work in stations. We were interested and pleased to note that the London Public Utilities Commission had recently adopted work standards patterned on those of the Commission.

The use of manpower, as you well know, continues to be an expensive component of a utility's operating costs. In the case of Ontario Hydro, as I mentioned last year, automation of generating and transformer stations has enabled the Commission to keep its operating staff at an almost constant figure since 1950—in a period when total resources have been more than doubled.

In addition, the increased use of electronic data processing equipment has helped the Commission to reduce costs and increase efficiency in many areas of operation and administration.

ALL STATISTICS relating to the Commission's 500,000 rural customers, and the entire billing operation for these customers, have been handled by the electronic equipment for more than a year. The year 1961 saw the transfer to the new computer system, of all our manpower data — including all details of the payroll, the distribution of labor cost to the appropriate accounts, and general personnel statistics. In the near future, we shall similarly process the continuous record of the movement of inventories and equipment through stores to incorporation in projects, including all costs associated with these operations.

At the same time, our data processing equipment — for more than 25 per cent of its operating time — is an invaluable tool in the solution of complex scientific and engineering problems. These problems are solved in a small fraction of the time that would have been required if we had used more conventional methods.

Without the use of our electronic computers they might have remained unsolved, or they would have been solved economically only with a very rough degree of accuracy. This computer equipment has contributed significantly, for example, to the excellent results achieved by the Operations Research group which, among other things, has worked out a method of progressive reduction in inventories and equipment carried for the maintenance of the system.

Let me carry this example further. As the frequency standardization program approached its conclusion, the Commission's inventories had a total value of \$46.2 million. At a nominal six per cent carrying charge, this would represent an annual cost of approximately \$2.7 million.

By the end of 1961, through the application of Operations Research studies and the introduction of more efficient procedures in ordering, stocking, and distributing materials and equipment, our inventories had been reduced to \$35.1 million.

By comparison with 1958, economies in carrying charges of approximately \$666,000 per year are being achieved, and yet requests for materials are now being more expeditiously filled, and orders for additional stock are being efficiently processed.

HEN a method of economic power dispatch, recently developed through mathematical studies by the Operations Research group, is implemented, it will—according to the first results indicated by our electronic computer calculations—produce savings of from \$1,000 to \$2,000 a day in the operation of our thermal stations and our United States interconnection facilities.

I bring these matters to your attention, not in a spirit of boastfulness, but to serve as illustrations of some of the things which can be done to improve productivity and cost control in the operation of an electrical utility.

While the reduction of operating expenditures is undoubtedly of major concern to all of us, we should not overlook the paramount need for vigorous participation in

enlightened load-building programs as the only sure means of increasing our revenues.

Most of you are, by now, familiar with the satisfactory results of two special appliance promotions last year. But let me point out that perhaps one of the most important results of these two campaigns was the new working partnership which many of the utilities, as well as Ontario Hydro, established with the manufacturers of electrical equipment, as well as many local distributors, dealers, contractors, and other allies in the electrical field.

Our combined efforts have enabled us to arrest the slackening in momentum of electric water heater installations, which was giving us cause for concern a couple of years ago. During the year, a total of 52,500 water heater installations were made by Ontario Hydro and the associated municipal utilities — an increase of 25 per cent over the number installed during 1960.

As you know, we have recently decided to bill water heaters on metered load, but to set aside a substantial block of kilowatt-hours at a special low rate for this purpose. We are convinced that this will have favorable results in greater customer satisfaction. Customers will be more likely than they were under the flat-rate system to select units of a size suited to their hot water requirements. Formerly, when faced with a choice of units of various capacities at graduated flat-rate prices, they were too frequently tempted to choose the unit with the lower price, hoping that they could adjust their requirements to its lower, and perhaps quite inadequate, capacity.

Let me again commend the members of this association for the vision and foresight they displayed in sparking interest in the possibilities of electric heating, which has made great strides in the last two years.

ODAY we find that you may now travel almost across the length and breadth of Ontario without getting more than an hour or two away from an electrically-heated motel. There are nearly 150 motels in Ontario which have installed this type of equipment. Nearly 1,900 homes, 70 churches, and half as many schools and a number of large commercial buildings, are being electrically heated in the Province. Only a few months ago, a 30-suite electrically-heated apartment house was formally opened in Toronto, bringing to 15 the number of apartment blocks so heated. In this installation, the heating load is registered on one meter and billed to the owner of the building, but the heating system in each apartment is independently controlled by the tenant.

Many municipal systems are enlisting the support of subdividers and building contractors in promoting public interest in Medallion homes. I think we can safely assume that any utility offering some measure of assistance in providing the added value of underground service to a subdivision, in return for an undertaking on the builder's part to meet the Medallion standards, will find, through increased energy sales, a more than adequate return from its initial investment.

Let me say, in conclusion, that if I have appeared to do some preaching this morning, I have done so in the knowledge that it would find a ready and sympathetic ear among the members of the A.M.E.U., who have consistently demonstrated their willingness to move forward to new achievements. This, I feel sure, is the major reason for its vigorous and healthy position today.

UNITED

PART 1 (of two parts)

When appliance dealer Tom Jones sold an electric clothes dryer to Mrs. Smith he pocketed a reasonable profit and never even thought about Dick Brown. But Mr. Brown was an electrical contractor, and he was called in to provide a three-wire service so that Mrs. Smith could get on with her washing.

Of course, Mr. Brown didn't know the people who manufactured the dryer or made the wire he installed. And he had never met Harry Hydro, manager of the local utility which was glad to help Mrs. Smith by providing increased service capacity to supply her new dryer. But they all benefitted—and so did Mrs. Smith. Her new electric dryer made life a whole lot easier, and her increased use of electricity was a factor in enabling the utility to keep its rates low.

Tom, Dick and Harry are strictly hypothetical, but they do represent the basic philosophy behind the co-operative approach to sales promotion being adopted by Ontario Hydro, the municipal utilities, and electrical contractors, dealers, manufacturers and distributors. They are joining forces to create an effective, industry-wide sales promotion team on the theory that the success of one creates benefits for all.

The ultimate winners are the people of Ontario, for the only way they can continue to enjoy their present rates (among the lowest in the world) in the face of rising costs, is through the increased individual use of electricity.

How one well-cast stone can ripple across the whole surface of the electrical industry is demonstrated on a much larger scale at Peel Village, one of the largest integrated land developments in Canada. When completed, this self-contained model community will have 3,000 single family homes and 3,000 multiple dwellings, as well as its own parks, schools, industries and shopping facilities.

Well armed with facts and figures, and with the enthusiasm that comes only with confidence in the product being offered for sale, Brampton Hydro was able to convince the developer that he should build to Bronze Medallion electrical standards. What Peel

WE SELL



Working together for the benefit of all, this group provided Peel Village with many attractive electrical features. From the left are: Marshall Lee, C.G.E.; Frank Gold, the homebuilder; Charles Watson, the subdivider; Vern Breen, manager and Elmore Archdekin, commissioner, Brampton Hydro.

The people of Ontario are
the ultimate winners
as the electrical industry
adopts a co-operative approach
to sales promotion.



Temporarily roped off to spare the grass during open house, this section of Peel Village suggests some electrical "extras" residents will enjoy. Pole-top luminaires, lawn lamps and underground distribution enhance appearance.

Village will mean to the electrical industry is worth examining.

Manufacturers of wiring materials and built-in appliances have been provided with an estimated \$5,000,000 market for their products, in addition to approximately \$3,000,000 worth of distribution materials that will be installed by Brampton Hydro. Electrical contractors will enjoy business easily worth \$1,500,000, and appliance dealers may eventually realize sales as high as \$3,000,000.

When the subdivision has been completed, Brampton Hydro's energy sales to domestic customers are expected to reach \$648,000 annually, an increase of about 100 per cent over the utility's 1960 domestic revenue. This adds up to a total of \$12,500,000 shared by most sections of the industry.

While it is impossible to calculate the individual effects the Bronze Medallion specifications will have on each member of the electrical industry, Brampton H.E.C. has been able to estimate the load increase directly attributable to these specifications. Instead of a 15,000,000 kilowatt-hour increase, the utility looks forward to a rise in annual energy sales of about 54,000,000 kilowatt-hours. It thus attributes some \$468,000 of annual revenue to the effects of the Bronze Medallion standard.

This seemingly exaggerated effect of the standards is largely due to the fact that the Peel Village homes are to be gas heated and the new home-owners would, undoubtedly, install many more gas appliances if extra electrical outlets and circuits were not available. And because the Bronze Medallion standards specify that electric water heaters be installed, this valuable load is being retained.

Built-in ovens and counter-top units are optional

at Peel Village, and the Brampton utility has taken steps to insure that the new home-owners can install additional electrical appliances with the least possible inconvenience and without undue strain on their pocket books.

They can finance their purchases through a local bank at regular bank interest rates, and with up to five years to repay. Payments are added to the regular Hydro bill. This financing arrangement is also available to other customers of Brampton Hydro, including those who may wish to finance improvements to their home wiring, or install electric heating.

Whatever may be the precise benefits accruing to the various sections of the electrical industry through Brampton's success in selling the Bronze Medallion standards to the Peel Village developers, they will be substantial. And this is just a case in point. Other instances where the work of one has been to the advantage of all could, undoubtedly, be found throughout the province and the country.

What is good for the parts is good for the whole, and it is this realization by the electrical industry which leads to the united approach to sales promotion.

It has been estimated that the Canadian electrical industry spent \$18,000,000 on market promotion last year. This potent force can go a long way towards ensuring that Canadians enjoy the full potential of electrical living. But, unless the left hand of the industry knows what the right hand is doing, it is impossible to achieve maximum value from each of these dollars.

The concluding article in this two-part series will attempt to show how, for the first time, a strong and effective marketing team is emerging which is truly representative of the electrical industry.

street signs that glow in the dark

Municipal street identification signs have at least one thing in common from coast to coast—they are hard to read after dark.

Peel Village, a self-contained community taking shape on the outskirts of Brampton, is an exception. The developers are taking the eyestrain out of night travel by introducing illuminated street name signs for the first time in Canada. Soon all 35 streets in the new model development will sport the new signs.

The C.S.A. approved units consist of a white enamelled steel box from which the 4" x 6" x 24" sign extends. It features a plastic face with black (acrylic process) lettering, and is illuminated by a 40-watt fluorescent tube. Single units cost in the neighborhood of \$50, while a corner installation is about double. They are designed to slip over a steel standard, and are secured with set screws.

It is expected that the illuminated signs will be installed and maintained by Brampton H.E.C. under an arrangement with town council similar to that governing the street lighting system.

Benefits of the lighted street signs will be felt by authorities such as the police and fire departments, as well as doctors, taxi drivers, visitors and residents. And the streets themselves will be illuminated with sophisticated poletop luminaires. Shaped like a coulee's hat, each fixture will hold a 125-watt mercury vapor light. Spaced 150 feet apart, the fixtures combine ideal lighting with aesthetic appeal.



MAKING SNOW GO -ELECTRICALLY

Electricity has done so much to improve modern living that it's not surprising to find it tackling the problem of ice and snow. The use of electric cable laid under driveways and sidewalks is not new, but an experimental project now underway may lead to greater things.

Tests are now being carried out on an unfinished ramp leading to the Frederick G. Gardiner Expressway, to determine how effectively electric heating can inhibit the accumulation of snow and ice. The test ramp is at the foot of Spadina Avenue in Toronto.

Co-ordinated by Lakeshore Expressway Consultants, the study is being made jointly by Metropolitan Toronto Roads Department, Toronto Hydro, and Ontario Hydro.

"The results of the tests look encouraging," says J. D. George, chief design engineer of Metropolitan Toronto Roads Department, "but the final value has yet to be ascertained." Statistics and evaluations will be compiled sometime after the last snowfall in Toronto, he said.

The heating element in the 90-foot stretch of test ramp is steel reinforcing mesh embedded between two layers of asphalt. The mesh is energized at a voltage completely safe for people and animals.

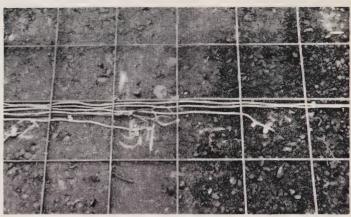
The test area is divided into four sections, each containing a heating element with a different wattage, with instruments placed throughout to measure variations in temperatures of the air, surface, concrete and asphalt, and to measure the amount of electricity being used.

Designer of the heating installation for the access ramp is Ian Dyke, of A. D. Margison Associates.

Metropolitan Toronto Roads Department supplied the materials and labor to build the test section of ramp. Toronto Hydro supplied the transformers and electrical energy necessary to the experiment.

Ontario Hydro's Research Division contributed instruments to measure and record temperature variations and the amount of electricity being used.

Harold West, a research engineer with Ontario Hydro, is keeping a close check on the instruments throughout the experiment. He started studying elec-



Top photo is a close-up of the energized steel reinforcing mesh used in the Gardiner Expressway ramp experiment. Lower view shows installation before top layer of asphalt was applied.



tric heating as a method of snow removal some five years ago. At that time, Mr. West used a model—a six-foot by eight-foot slab of concrete with heating cable embedded in it—to melt both real and artificial snow.

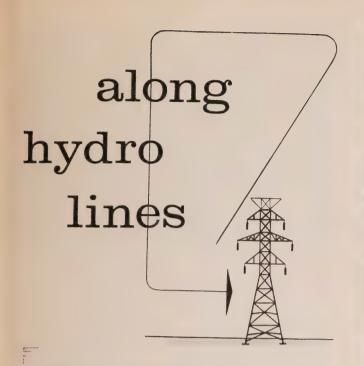
Satisfactory results from that and other experiments led to the use of electricity to keep snow off the powerhouse deck, used for maintenance vehicles, of Ontario Hydro's Robert H. Saunders - St. Lawrence Generating Station. The mineral-insulated coppersheath cable embedded in the road uses about 30 watts of electricity per square foot. Melting snow is carried off by drains.

"As we learn about electric heating cable in pavement, and how to operate it economically," says Harold West, "I can envisage it being used in bad stretches of highway, such as steep grades, bridges, and interchanges. I also think that it will come into more general use for driveways and sidewalks leading to public buildings.

"One particularly useful application of electric heating cable would be in driveways leading to underground garages in apartment buildings," Mr. West adds

Another major installation of pavement heating cable is being made at the new five-storey parking

(Continued on page 29)



Niagara Falls Hydro Retirement



An artist at heart, William Morgan of the Niagara Falls Hydro-Electric Commission can now work full time at the hobby he loves. And he has the tools. Retiring after 40 years' service in various departments, Mr. Morgan was presented with paints, tripod, easel and the book "Oil Paintings", suitably inscribed, by fellow employee Ross McQuade. Shown at the presentation, from left to right, are: Mayor F. J. Miller, Mr. Morgan, Chairman G. L. Burley, and Commissioner Thomas Barnes.

Long Service Honors

Long service is the rule at Toronto Hydro, and this was evident at the 34th annual banquet of the Quarter Century Club. No less than 24 members were honored on attaining 40 years of service, and four new members were welcomed to the 25-year ranks.

The annual banquet, which evolved from a dinner



Toronto Hydro is a family affair for the Redsells'. James Jr., left, has completed 40 years' service, while his father, right, retired in 1938. Chairman Merson congratulates them.



While 24 Toronto Hydro employees attained 40 years of service, only four joined the 25-year ranks last year. New members shown are: Carol Clark, Wilfred Godwin and Margaret Cates.

shared by two Toronto Hydro veterans, has become a tradition over the years—an event which everybody on the membership list of 643 looks forward to with keen anticipation. This year's get-together lived up to tradition—it was a jovial affair, well calculated to cement the bonds of friendship between people with a common interest.

In thanking the members of the club for their long and devoted service, Mayor Nathan Phillips said he was proud of the men and women who had made Toronto Hydro "the great publicly-owned enterprise it is today." Chairman Bertram Merson also paid tribute "to the people who have played so important a part in building the System which has become a monument to their own efforts."

Following other messages of congratulation, the coveted long-service pins were presented by Mr. Merson and Vice-Chairman John McMechan.

Among those receiving 40-year service pins was James W. Redsell, whose father, the club's longest retired member, was on hand to celebrate the occasion. A third generation of the family, Bill, has already completed 15 years of service with Toronto Hydro.



Elected to the new District 5 O.M.E.A. executive were, left to right, front row: C. R. Craig, Burlington; C. N. Swazie, Welland, president; Harold Schneider, Port Dover, past president. Back row: George Laughlin, St. Catharines; Dr. J. D. Fleming, Dundas; Richard Jones, Stamford. Not shown are J. A. Camelford, Dunnville, and B. T. McCann, Simcoe.



Members of the District 5 load-building panel, left to right, are: Harold Schneider, Port Dover; Andrew Frame, Burlington; moderators Alex Crate and Ian Stubbs, Ontario Hydro; George Laughlin, St. Catharines; James Arvay, Welland; Richard Jones, Stamford and J. A. Williamson, Niagara Falls.

O.M.E.A. District 5 Meets at Burlington

Load-building vied with labor relations for top billing on the busy agenda of o.m.e.a. District 5 annual meeting, held in Burlington.

A talk by C. B. C. Scott, Ontario Hydro's assistant general manager, personnel, entitled "The Present Trend in Labor Relations," preceded discussions on this topic. Mr. Scott described the attitude of the International Labor Organization and lauded the calibre of labor leaders in other countries for their self-discipline in being prepared to deny themselves in the interests of economic stability. He appealed for a more honest and mature approach to their problems on the part of both management and labor.

Delegates drafted two resolutions pertaining to labor relations, the intent of which was subsequently endorsed at the annual meeting of the parent body, in Toronto.

The resolutions asked that a study be made of the feasibility of instituting a joint municipal electrical utility bargaining plan; and that the Ontario Government be asked to have the electrical utilities classified as essential services and thus make compulsory arbitration available for peaceful settlement of labor contract disputes. Many aspects of the vital load-building problem were investigated by a panel moderated by Alex Crate and Ian Stubbs of Ontario Hydro.

Speaking of the value of advertising in a utility load-building program, George Laughlin, a St. Catharine's Commissioner, urged that the utilities "appeal to the self interest of your customers." He said advertising should be aimed at convincing the customer "that our success is his success—he understands when it affects his pocketbook."

James Arvay, Welland Hydro Commissioner, gave his views on the value of public relations. He said it must start with a policy which could be understood and respected by those who would carry it out—the employees. He believed that a sound PR program could rekindle interest in a utility, create a tendency in the public to come to its defence, and help assure that a sales story received attention. He said it would not change opinions overnight nor overcome prejudices not corrected at their source.

Other panel speakers included Richard Jones, Stamford Township; J. A. Williamson, Niagara Falls Hydro; and Andrew Frame, Burlington.

The intricacies of Ontario Hydro's sinking fund program were outlined by Commissioner D. P. Cliff, while delegates were brought up to date on the pension and insurance plan by P. R. Locke, chairman of St. Thomas Public Utilities Commission.

Brockville Switches Over



At a quiet ceremony that went unnoticed by the majority of citizens, Brockville P.U.C. Chairman J. R. Philips threw a switch to send power surging through one of Canada's most advanced substation installations. Built at an overall cost of \$143,000, the new station is the outdoor and "underground" type, with all equipment housed in bright green compartments. The station steps voltage down from the 46,000-volt sub-transmission level to 4,160 volts for distribution. An unusual feature is that the 46,000-volt compartment is completely metal-enclosed.

Shown in the photo, from left to right behind Mr. Philips, are: Mayor J. W. C. Langmuir; Commissioner R. Allan Greene and Manager Henry Little.



A First for Leamington

It was a proud moment for Leamington Public Utilities Commission when Chairman C. W. Howdon officially placed this modern distribution station in service. He is shown with Hydro Superintendent Harvey Wallace, left, examining the installation. The new station is rated at 5,000 kva, and is the first owned by the utility. The P.U.C. had previously used Ontario Hydro facilities.

U.S. Utilities Guarantee Heating Cost Estimates

Several United States utilities are issuing guarantees that their estimates of electric heating costs will not be exceeded. Among the latest is West Penn Power Company, which has announced a guarantee covering the cost of total electric service in new, electrically-heated homes in the western Pennsylvania area it services. The guarantee covers a three-year period during which time the customer receives the difference in cash if his bills exceed the estimate.

MAKING SNOW GO (Continued from page 26)

building under construction at Toronto International Airport. Approximately 15 miles of heating cable, covered with steel mesh, has been placed between two layers of asphalt, to keep about 5,600 square feet of exterior ramps free from snow. The possibilities of using electric heating cable under airport runways have been discussed.

A number of homeowners have also installed electric heating cable in sidewalks and driveways to keep them clear of snow and ice.

Electric heating cable has been installed in sidewalks leading to a number of public buildings in Ontario, including several offices of electrical utilities.

In Toronto, ramps for numerous parking buildings are kept free of snow and ice electrically, and the new Metropolitan Toronto Education Centre, the Shell Oil Building, and the Western Medical

Building all have electric heating cable installed in front steps and sidewalks.

A completely different method of melting snow electrically is by infrared radiant heating, which warms people and objects but not the air, just as the sun does. Overhead fixtures can keep an area free from snow and ice and, at the same time, provide adequate lighting, making infrared radiation particularly suitable for some commercial and industrial installations.

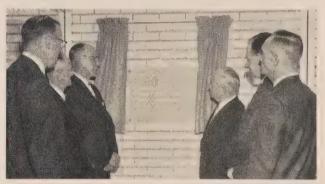
But don't throw away that shovel yet.

Until studies are completed and installations have undergone the test of time, the major methods of snow removal will be snow plows, and snow shovels operated by muscle power.

Dundas - A Utility Showcase

"This fine administration building and its auxiliary, the new service building a few blocks away, are the climax of an intensive 10-year rebuilding program by the Dundas Public Utilities Commission," D. P. Cliff, Ontario Hydro Commissioner, told his fellow townsfolk and guests at the official opening.

"The depression years, the war years, and the years of waiting for frequency standardization prevented anything more than patch-up maintenance



Ontario Hydro Commissioner D. P. Cliff unveils plaque at Dundas opening ceremonies. Left to right are Dundas Commissioners Dr. J. D. Fleming, William Newitt and M. T. Jaggard; Mr. Cliff; Chairman K. Y. Hinton and Mayor J. A. Warren.



Glass is predominating exterior feature of this handsome new Dundas P.U.C. administration building. Electrically heated and air-conditioned, it contains generous display area and will meet the needs of a growing municipality for years to come.

of Dundas' water and electrical systems," Mr. Cliff continued.

He said, "Prudent policies and management have, however, overcome the years of forced obsolescence, and today Dundas has an electrical and water system equal to that found anywhere in Ontario, and a system planned to take care of expansion for years to come."

Constructed of white brick with an attractive front of field stone, black spandrel panels and thermal glass, the administration building is 52 feet wide and 70 feet long. The main floor has a spacious general office area flanked by the offices of the general manager, accountant and office manager, a lounge, billing room, and a wood panelled board room.

The second floor is on the same central plan with the offices of the electrical and water department superintendents, a map room, and space for display and future offices.

The building features the latest in illumination and electric heating. Strip heating along the baseboards is supplemented with convectors in conjunction with the central air conditioning duct system.

Mr. Cliff reviewed the growth of the town and its public utilities commission since 1911, when first



Modern appointments, spaciousness and the cheerful staff at Dundas P.U.C.'s new administration building combine to remove much of the pain normally associated with bill-paying.

power was supplied by Ontario Hydro. He contrasted the 56 kilowatts supplied at that time to the present system, which supplies 10,000 kilowatts to 3,600 domestic customers, 400 commercial, and 85 large industrial customers.

In declaring the building open, Mr. Cliff paid tribute to the local commission and staff. Particular mention was accorded Dr. J. D. Fleming, who, as the 1960 chairman, had guided the commission through the initial clearance of details which resulted in the construction of the new facilities.

W. Ross Strike, Ontario Hydro Chairman, reflected the views of other speakers throughout the day, when, at the evening banquet, he said, "Today's events are a tribute to the type of public service we have come to expect from our public officials in Ontario. I am sure I express the feeling of all when

I say that this has been a tribute to Bud Cliff, who has served the people of Dundas in many roles, including that of commissioner and chairman of the Dundas P.U.C., and who has maintained an active interest in the town while serving in the larger field of public utility management as a Commissioner of Ontario Hydro."

The day's program included an inspection of the new service building, which is also shared by the electrical and waterworks departments. Of white block construction, with 8,800 square feet of floor area, the new service centre includes a storeroom, repair garage, communications centre, locker rooms and offices.

A Report on Pensions

The annual report of the directors of the Municipal Hydro-Electric Pension and Insurance Plan reveals just how extensive its coverage has become. By the end of 1961, the Plan included 7,656 employees in 167 municipalities. There were 666 employees actually drawing pensions, and a total of \$42,880,880 of life insurance benefits in force at the end of the year.

The report noted governmental interest in portable pensions, but was unable to predict the effect they might have on well established plans such as this. The Pension and Insurance Committee advised that it would be watching developments in this field with interest.

Hydro Withdraws Request For Niagara Diversion Study

Ontario Hydro has withdrawn its request that studies be undertaken by the International Joint Commission as to the feasibility of summertime water diversion for power generation at Niagara Falls in excess of that allowed by the 1950 Canada - U.S. Treaty. Similar action has been taken by the Power Authority of the State of New York. The request had been contingent on there being no interference with the scenic beauty guaranteed by the Treaty.

The action was taken in the light of two facts. The P.A.S.N.Y. generating station at Queenston is only now coming into full service, and additional operating experience under the new conditions was thought desirable. And the beneficial effects on river flows of the additional control works ordered by the International Joint Commission, now under construction, will not be known with complete certainty for some time. These works consist of five additional sluices in the control dam above the falls, a training wall parallel to the Canadian shore above and below the control dam, and the removal of the top of a submerged weir 250 feet upstream from the control structure.



First Norwich Pensioner

When Manager Bill Vigar retired from Norwich P.U.C. last month after completing 40 years of service, he became the village's first civic employee to retire on pension. He commenced with the Norwich utility in 1912 and, after a nine-year stint as an appliance dealer, he returned as superintendent in 1928. He was invited to attend a recent meeting of the commission, where he was presented with his first pension cheque. Shown at the presentation, from left to right, are: Reeve L. E. Force, Mr. Vigar, Harold Williams, commissioner, and A. P. Maedel, chairman.

Speaking Contest Finals Set

Finalists chosen from the more than 200,000 elementary and secondary school students participating in this year's Ontario Public Speaking Contest will compete for top oratorical honors in Toronto, April 23 and 25.

Co-sponsored by the Ontario School Trustees' and Ratepayers' Association and Ontario Hydro, the finals will be held in conjunction with the Ontario Educational Association's 101st annual convention.

Nine winners will be chosen from the finalists competing in the three sections of the contest which are: prepared speeches by elementary and by secondary school students, and impromptu speeches by secondary school students.

Mrs. W. G. Davis Dies at Windsor

Delegates attending the 53rd annual meeting of the O.M.E.A. and A.M.E.U. were saddened by the death of Mrs. William G. Davis, 31, wife of William Grenville Davis, M.P.P. for Peel and recently appointed Second Vice-Chairman of Ontario Hydro.

They learned of her death shortly before Mr. Davis was to have been introduced to the meeting.

Mrs. Davis was the former Helen MacPhee of Windsor, and she was visiting her family there at the time of her illness. She had undergone major surgery in November, and had not been in good health since that time.

A graduate of the University of Toronto, in Arts, she was a member of the Delta Gamma Sorority.

In addition to her husband, Mrs. Davis is survived by her four children, Neil, six; Nancy, four; Cathy, two; and Ian, four months. They reside in Brampton.

municipal briefs

St. Thomas P.U.C. advertising has once again been chosen by the Publishers Idea Exchange, Des Moines, Iowa, for inclusion in their monthly publication. The ad in question appeared in the St. Thomas Times-Journal, and was headed "new home in your future?" It stressed the importance of considering the future in terms of electricity before buying or building a home. Subscribers to Publishers Idea Exchange include hundreds of newspapers in the United States and Canada.

The Federal Government has agreed to pay half the cost of placing overhead distribution facilities underground along certain Ottawa thoroughfares. The work would have to be completed before Canada's Centennial celebration in 1967. The city had hoped for federal assistance in a "parliamentary perimeter" area involving most of the up-town district. A committee will be formed to start planning underground distribution in the approved areas.

Espanola Hydro has persuaded Town Council to pay cash for a \$5,000 street lighting program scheduled for this year so that the Hydro commission would have sufficient funds to go ahead with its plan to install a flat-rate water heater control system.

The Hydro Commissions of Sarnia and Kincardine have been lauded in the press for quick action in the face of emergencies. At Sarnia, the Gazette offered "sincere thanks" to the linemen, who quickly restored power after a truck boom sheared a power line, immobilizing the presses. An outage at Kincardine caused by a fallen limb plunged the General Hospital into darkness, and, while it was soon corrected, it spurred the hospital board into action with regard to an auxiliary power system.

Waterloo citizens use more electrical appliances, on a percentage basis, than those in 11 other centres in that area—according to a survey conducted by the O.M.E.A. The poll listed 15 different types of appliances and, of this number, Waterloo led in seven categories and was runner-up in most of the others. Elmira led the area in the use of electric water heaters with 84 per cent saturation.

Woodstock hopes to annex 2,250 acres in surrounding townships, and is applying to the Ontario Municipal Board for approval. The move would increase the city's acreage by 65 per cent, and the population would be increased by some 600 persons.

Confronted with increased energy rates for street lighting, one member of Kingston's traffic and streets committee suggested that gas lights should be considered in certain areas. The P.U.C. will be contacted as to the feasibility of the suggestion.

Arnprior joined the growing ranks of Ontario municipalities with Gold Medallion homes when Mr. and Mrs. J. P. Mulvihill and their three children recently moved into their new residence. Utility Chairman Dr. A. H. Reid was on hand to present the family with the Gold Medallion certificate. At last count there were 225 Gold Medallion homes in the province, with 81 others under construction.

Hespeler Hydro has upped the charge for restoring power to delinquent accounts from \$1 to \$5. Chairman Carl Franks noted that three reminders were delivered before power was cut off, and that sickness and other extenuating circumstances were taken into consideration.

West Ferris Township is studying a proposal to engage a telephone answering service for fire, police and water department calls. The Hydro commission had already expressed a preference for the answering service as a means of accepting after-hour calls.

The Hydro-Electric Systems of Espanola, Pickering, Caledonia and Coniston estimate their 1962 capital expenditures at \$33,800, \$14,000, \$11,500 and \$11,000, respectively.

Terrace Bay Hydro, whose residential customers use more electricity, per capita, than those of any other Ontario municipality, will adjust its rates, April 1, to increase revenue. Erie Beach Hydro has increased its minimum bill from \$18 net annually to \$30. A large proportion of the utility's customers are summer residents, as evidenced by the fact that 855 minimum bills were submitted in 1961 to a total of 129 residential customers. London P.U.C. has adopted a special flat rate of \$3.17 gross per month, subject to a prompt payment discount of 10 per cent, for energy supplies to water heaters with a lower element rating of 1,000 watts and an upper element rating of 1,000 to 3,000 watts.

Ontario Hydro Commissioner Lt.-Col. A. A. Kennedy has stepped down from the chairmanship of the Owen Sound commission, which he has occupied since 1946, in favor of Norman H. Robertson. Col.

Kennedy will hold the vice-chairmanship for 1962. Presenting his report of electrical department operations, Manager Robert Butter noted that \$10,074 had been loaned under the utility's time payment plan for rewiring, and \$12,074 had been loaned to help customers finance major appliances.

London P.U.C. held a dinner to honor David Newton, line superintendent, who retired after 40 years of service.

Hydro Chairman Visits Sarnia



Speaking at a recent meeting of the Electric League of Sarnia, Ontario Hydro Chairman W. Ross Strike was enthusiastic about the work which could be accomplished on a co-operative basis by groups representative of the industry, such as the various electric leagues. The Hydro Chairman took advantage of the occasion to visit the Dow Chemical plant, and to inspect the Sarnia and Ontario Hydro systems in the area. He is shown, in the photograph, at a Sarnia Hydro substation with, left to right: local commissioners C. J. Spicer and E. W. Allen; Mr. Strike; Chairman John T. Barnes and Arthur Christie, President of the Electric League of Sarnia.

Hydro Participates in Northwestern Development

Rich in minerals, Northwestern Ontario is soon to have another producing mine as development continues at the Gordon Lake nickel property of Nickel Mining and Smelting Corporation. Ontario Hydro is building an 18-mile transmission line to the mine from its generating station at Caribou Falls.

And the road constructed by Ontario Hydro to facilitate construction of its power plants at Caribou Falls and Whitedog Falls is to be extended by the provincial government to provide access to mining and timber properties. Commenting on the extension, Kenora Miner and News says it will reach into one of the largest natural tourist areas in Ontario. It says that a myriad of new lakes teeming with game fish will be opened up and that something in excess of 20,000 lakes will become accessible as other roads are built in the area.

OFF THE WIRES



There is more than one way of naking a point as Harold Browntill, manager of Stamford Townhip Hydro, proved at a recent D.M.E.A. regional meeting on pad-building. Harold explained low Stamford and Niagara Falls Hydro had run an advertising



ampaign in the local newspaper onsisting of a single line each ight-such as "Electricity is Quiet" or "Electricity is Modern". His presentation was convenonal until he stripped off his acket to reveal a shirt emroidered with most of the mesages the paper had carried. He redits (or blames) Niagara Falls Ivdro manager Red Williams ith the original idea. "We nought most Hydro ads were a it heavy on copy," he explains, so we went to the opposite xtreme and attracted a lot of iterest.'

He was prevailed upon to wear ne shirt at the District 5 D.M.E.A. annual meeting, where e ran afoul of our cameraman.

The electric water heater load is enerally regarded as one of the est by the electrical utilities, but ow many know the part Benjain Franklin played in its development? In addition to the kite-flying antics this renowned author, philosopher and inventor employed in identifying lightning and electricity, he had one outrageous personal habit which, undoubtedly, left its mark on our subsequent social behaviour. Ben scandalized his neighbours by taking three baths a week at a time when even the doctors considered the practice dangerous and detrimental to health.

* * *

Unless times have changed more than we suppose, children still tend to regard the men who pilot aircraft with something akin to awe. But we know of one recent incident where the valiant efforts of an Ontario Hydro helicopter pilot earned him the Bronx cheer. A group of rural school children watched with glee as he tried in vain to extinguish a blaze which broke out in their one-room school, near Rosedale.

On a routine power line inspection flight, pilot Bill Brown spotted smoke billowing from the structure, and he guided a fire truck over icy back roads to the scene. He then hovered over the flames, endeavouring to extinguish them with the wash from his rotor blades. And it nearly worked, but, to the delight of the small onlookers, flames broke out again and destroyed the 100-yearold school. Hopes of an enforced holiday were quickly dashed when the resourceful school teacher set up temporary shop in the town hall.

* * *

Ever since Hydro News carried an article on Dutch Elm Disease, last June, we have been keeping an interested eye on developments in this field. And reports continue to flow in with regard to the damage caused by the deadly beetle-fungus combination responsible for the disease.

The University of Toronto, where ten per cent of the campus elms have succumbed to the plague, is becoming the focal point for a counter-attack against the disease. Discussions were recently held there with the heads of the park departments of the 13 Metro Toronto municipalities and others concerned, including Ontario Hydro.

A Dutch Elm Disease Co-Ordinating Committee has been formed, and it is seeking legislation to prevent the careless removal of infected trees. The committee points out that such trees should be destroyed on the spot by fire, or properly sprayed with DDT and fuel oil before being removed. It seems that when diseased trees are hauled off by trucks, the beetles fall off en route and can spread the blight throughout the area traversed. The committee is also asking for provincial grants to municipalities so that they can carry out disease control programs.

Electrical utilities will be watching developments very closely, for dead elm trees are another of the myriad factors which influence the cost of power.

Our monthly chuckle concerns the housewife who was watching her husband fishing in a bucket in the living room. Said she: "I'd like to take him to the psychiatrist, but we need the fish."

Quote of the month belongs to Wilson Mizner, who said: "The most effective water power in the world is a woman's tears."



GOLD

When the frost is on the pumpkin and the corn is turning brown, the chances are that gold will gleam throughout the autumn land. And it will be the glitter of the Gold Medallion Showcase—a campaign to put 200 Gold Medallion Homes on display across the province from September 7 to October 21. Its purpose—to acquaint the public with the many attractive features inherent in the Gold Medallion symbol.

Naturally, there's a lot of spade work to be done before "open house", and the folks behind the Gold Medallion Showcase are already getting into high gear. It's a co-operative effort by the municipal electrical utilities, distributors, manufacturers, builders and Ontario Hydro. Early indications are that it will receive the enthusiastic support of all.

To pave the way, more emphasis will be placed on Gold Medallion in Hydro's province-wide advertising program. And, as zero hour approaches, each display home will be identified and well publicized.

Builder participation is, of course, vital, and a number of incentives are being planned. These include:

• Payment by Ontario Hydro of all heating costs over \$100 incurred by

medallion

the builder while the house remains unoccupied during the first heating season.

- A choice of the following, up to \$100 value: 40 gallon superfast electric water heater; lawn post lantern; underground service entrance; valance lighting; luminous ceiling; exterior lighting.
- An electrical manufacturer will offer a wiring and appliance "package" to the builder, and will loan free-standing appliances and equipment during the period of public display.
- Participating builders will have a chance to win \$200 in a merchandising contest. One prize will be offered in each of the eight Ontario Hydro Regions.

Visitors to the Gold Medallion homes will also be in line for prizes. Eight washer-dryer matched pairs will be offered in "lucky visitor" contests.

Municipal electrical utilities will be able to obtain details from Ontario Hydro regional personnel, as well as the tools they may need to sell the plan to local builders and put their communities into the Gold Medallion Showcase.

showcase

TOWN or CITY

The Editor, ONTARIO HYDRO NEWS 620 University Ave., Toronto, Ontario My address is incorrectly listed; please change it to:

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| COMPANY | | | | |
| STREET and | NO | | | |

PROV.

Please return this, with your old or incorrect listing to The Editor.



Helicopter pilots lend a hand as Ontario Hydro scores a first in linebuilding techniques . . . see page 16. Other articles include: ORPORATE IMAGE • STAMP OF SAFETY • SOIL PASTEURIZATION • UNITED WE SELL



In His Favorite Element

Able bodied staff photographer Harry Wilson likes the tough assignments, and this one was right down his alley. Deposited here by an obliging helicopter, Harry proceeded to record the unusual goings-on with his trusty camera. For some of his photographs, and a description of the unique line-building technique employed between Hornepayne and Manitouwadge, turn to page 16.



(C) PUNCH - Ben Roth Agency

It's Too Late for a Pillow

We thought this cartoon was a good way to introduce our article "Corporate Image" although it's difficult to imagine any utility manager with so little regard for public relations. Then, too, we always conceived PR to be more of a long-term, constructive process rather than a quick remedy for ills caused by short-sighted policy. For a better understanding of corporate image, please turn to page 2.

APRIL, 1962 ONTARIO HYDRO NEWS

CONTENTS

- 2 Corporate Image
- 6 Stamp Of Safety
- 9 Hydro Has A Green Thumb
- 12 United We Sell
- 16 Line Building From The Air
- 21 Along Hydro Lines
- 25 Off-The-Wires

THE COVER

Pilot Ken Wallingford is shown at the controls of the big Sikorsky S-58D, latest and largest addition to Ontario Hydro's growing fleet of helicopters. The machine made an impressive debut as the star in the line-construction drama described elsewhere on these pages. A leader in the use of helicopters for transmission line inspection and other electrical utility operations, Ontario Hydro foresees an important role for these versatile aircraft in line construction in remote areas.

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THE COUNTDOWN

With all the anxiety of space scientists at Cape Canaveral, this trio in the control room of Canada's first nuclear-electric station makes final check-outs as the zero-hour approaches.

After extensive testing of the complex electronic circuits and various plant systems, heavy water was pumped into the aluminum reactor tank that contains the uranium oxide fuel. And at 2.40 a.m., April 11, a neutron counting instrument indicated that a chain reaction had been achieved. Nuclear Power

Demonstration, or NPD as the project is more popularly known, had "gone critical."

This meant that the "furnace," or reactor, in the power station was "burning" uranium for the first time. Various commissioning tests will be carried out during the next few months before the reactor is brought up to its full heat output and steam is fed from the steam generator into the turbine-generator unit to produce electricity.

The 20,000-kilowatt NPD station was built as a co-operative project of Atomic Energy of Canada Limited, Ontario Hydro, and Canadian General Electric Company Limited. When its output is fed into the provincial grid, Ontario Hydro customers will become the first Canadians to utilize electric power derived from the atom.

ī

During the past twenty years,
and at an increasing pace
during the past ten years,
business and industry
have been looking sharply
at their public relations.
"What sort of front
are we presenting?"
is the question they ask.
Out of their findings
they are building what has
come to be called their





(From the Royal Bank Monthly Letter)

Every company (and organization), big or small, has a corporate image. It is the sum total of all the bits of information about the company reaching the public. The company's basic philosophy, such facets of its personality as its dealings with the public in terms of product and service, its attitude toward its own personnel, its interest and participation in community matters—these grow, stroke by stroke, into a picture of the company in people's minds.

Consequently, the customer's initial buying decision is not made on quality and price alone, but also, and to an increasing degree, on his impression of the maker and the seller. The questions he asks himself, often subconsciously, are: What reputation has the maker of these goods? How does his personality come through the verbal sales pitch? What image is impressed upon the emotional side of the customer's mind?

That this is true is seen readily when we examine the thoughts of a housewife who is shopping for an electric appliance. She is not the least bit interested in the complex operations of business; she knows that appliances of similar quality will be, by and large, in the same price range. What, then, does she seek to learn? Is the maker dependable? How will the manufacturer and this store treat me if my appliance needs servicing? What is the attitude of the store toward exchanges in case my husband doesn't like the appliance? Are the manufacturer and the store trying to serve me, or merely to sell me something?

To establish its image, a company must first decide what it wants to look like and then set about doing the things which will, when displayed to the public, leave the impression it wishes to make.

People tend to humanize companies by attributing personality characteristics to them. They sum up a firm in the same way as they sum up an acquaintance. It is, in a word, "friendly," or "liberal," or "self-respecting," or "solid." They like to deal with firms they can "feel good" about.

But this image is not something put together by magicians in a secret room. It is the outcome of careful consideration and planning in which the chief executives of the company are deeply involved.

A desirable image cannot be imposed upon the public by shouting



about the company's merit. It is something to be built from the inside out, taking note of these things which are necessary to any constructive work: truthfulness, meaningfulness and believability.

It cannot be too often said that little things count. We, individuals as well as corporations, are judged by our behavior, not in great crises but in minor adjustments of daily life. A corporation, like a person, will be judged upon its correspondence, its reception of callers and customers, its sales approaches, the

courtesy of its clerks, truck drivers and elevator operators, the spirit of its executives. It is the personal experience of people with the company's workers and products that is of paramount importance in image-building.

Our corporate image cannot be effective so long as it is made up entirely of what we think about ourselves. There may be a critical gap between what we hope we are and what people think we are.

It may be necessary to make periodic surveys of our public. Building of the corporate image cannot be done by masterminds, segregated from the people the image is to influence. The image must be constructed, not to make us feel good but to be interpreted by our public so as to give a true picture of our aims, our sincerity and our achievements.

Who make up this "public" we have been talking about? Most important are customers and potential customers. They hold our success in their hands. Their basic criterion in buying is to get value for their money, but their judgment of what is good value has changed. In an era when consumer credit is freer than it ever was before, people buy less for cheapness than they used to. They look sharply at the manufacturer's and the retailer's reputation.

Secondly come our employees. When men and women work for a company which has a good public reputation, they are proud of their affiliation and are loyal. The corporate image affects both productivity and labor turnover.

This is a noisy world in which we live. Our ears are assailed every day by hundreds of talkers on radio and television, and every time we blink our eyes they open upon a new advertisement. All these are competing for attention. We must get our message through the barrage to our target, and we can't do that merely by shouting louder or using more display space.

BURLINGTON BUILDS A GOOD

*

Supervising Meter Reader Harry Bri continues rounds after leaving special n card on front door knob of h where he found nobody home. He holder (far right) returns from shop and discovers timely remin

In Burlington, they take a positive approach to customer relations.

*Corporate Image

"Too often, in communicating with customers, some of us take a negative attitude," says Burlington's E. A. Washburn.

"We are continually telling the customer what he must not do. Here, in Burlington, we try to accent the positive, and tell the customer what he can do and, in particular, what we can do for him."

Manager of Burlington P.U.C. and chairman of the Public Relations Committee of the A.M.E.U., Ed Washburn is a man who puts a lot of thought into the complex subject of utility-customer relationships.

"This is the area in which a utility either succeeds or fails when it comes to building and maintaining a good corporate image," says the Burlington manager. He asks: "How many utilities insist on a signed contract before they will connect a service? It doesn't matter if a customer lives 30 miles away (a distinct possibility in Burlington as well as in many other municipalities in this era of suburban sprawl). Some utilities insist that he come to the office during normal working hours when he should be attending to his own job."

Burlington P.U.C., reflecting its public relations-conscious commission and manager, has developed a sound approach in handling new customers. Ed Washburn says, "We don't shut the power off when a residence is vacated.

"When the new tenant or owner moves in, the power is on for immediate use. You see, our legal department has determined that, by turning on the switch, the user becomes liable for the cost of that power, so why burden the new customer with the detail of signing a contract before he can get service. When the meter reader takes the final reading of the old customer, he leaves a simple card to be signed by the new customer and returned to us in a self-addressed envelope.

"The card, envelope, and explanation are placed at the front door. It is surprising how few contracts must be followed up for signing."

Another utility problem is created by the homeowner who isn't there when the meter reader calls. Call backs and subsequent office routine are a headache in time and money. In Burlington, Ed Wash-



trlington General Manager Ed Washburn (above) and Administration Manager John Horsley and staff accent the positive in dealing with customers.





burn and his staff have reduced this problem to a great extent by the use of a special meter card designed to hang on the front door knob. The card is self addressed and immediately recognizable. Because the Burlington utility also handles water supply to the town, it must gain entrance more frequently than would a utility concerned only with electricity.

A happy by-product of this approach is the fact that the meter reader need only drive by the house to learn if the card has been removed from the door knob and likely, therefore, to be on its way back to the office.

"It is often the small matters that affect a customer's attitudes and relationships with his utility," Ed Washburn believes.

"In most cases, it is only when trouble occurs that the average customer has any contact whatsoever with the utility staff.

"Our people, therefore, have been trained to keep a watch on the little things to prevent them getting out of hand. For instance, our readers and billers keep a close watch on meter readings. If a reading shows a sudden unexplained jump from the previous reading, the meter reader tries to determine from the customer what would account for it.

"If this fails to explain the increase, or there is no responsible person present, the meter reader makes a note of the occurrence.

"If the biller can find no explanation—such as a high billing in a comparable period—a man is dispatched to investigate. It may be an oven that doesn't shut off properly or a leak in the water system.

"But our care convinces the customer our first concern is for his interest. We've found that this is less costly and easier on everyone concerned."

Burlington P.U.C. had to expand water and electrical service to the "Largest Town Area in Canada" when Burlington annexed the whole of Nelson Township on January 1, 1958. The utility prepared a letter, announcing a rate increase, which was sent to each of its 3,300 original customers. A second letter explained rates and services to its 9,000 new customers.

In spite of a rate increase, customers accepted the change with little grumbling for, at the same time, the utility stepped up its service. Today, all complaints are investigated promptly, and for most small services, such as fuse changing, no charge is made.

"We have found that the cost in office time and ill feeling towards the Commission cannot be offset by the \$2.00 charge normally made for this type of service," Mr. Washburn explains.

"We felt the personalized approach of a letter would create a more favorable attitude than the coldly statistical explanation provided by advertisements and brochures.

"To us, public relations means personal contact and service. We try to determine how each decision of the board will affect our customers and endeavor to make it as simple and clear as possible to our chief public, the customer."

Attention to detail, clear and concise interpretation of commission policies, and fast, efficient service prove in Burlington, as elsewhere, that good public relations must start with action to prove the words which the utility wants to have said about it.

You might call it a most successful program of good corporate image building!

THE STAMP OF SAFETY



The C.S.A. symbol
appears on every piece
of approved electrical equipment
used in Canada,
but many are unaware
of its significance.

by Bob McDonell



This battery of high temperature ovens at C.S.A.'s Rexdale approval laboratory is used for testing wirng insulation and other products where the ability to withstand heat is important.

In a modern laboratory on Metropolitan Toronto's northwestern outskirts a dedicated group of engineers and technicians assure the safety of millions of Canadian electrical users.

Evidence of their vigilance is on every piece of electrical equipment, appliance and fixture legally brought into use in Canada since 1940. This is the now familiar trademark of the Canadian Standards Association.

The story behind the safety symbol is one of cooperation, compromise, and years of voluntary labor on the part of manufacturers, distributors, consumers, utilities and inspection authorities from coast to coast.

Basically, C.S.A. approval of electrical goods means that the item bearing the stamp has met the safety requirements set by the Association for the use specified. It is not a grading of quality, nor does it imply good performance. A vacuum cleaner, for ex-

ample, could quite conceivably do a poor job of cleaning and still qualify for C.S.A. approval.

Only insofar as good workmanship and material may be necessary to assure safe operation can the C.S.A. stamp on electrical goods be construed as a guide to quality.

It is to the credit of the C.S.A. that its standards and methods of control have been accepted by each of the provinces since 1940. In the legal sense, the Association insures that its mark is used only on products which meet its requirements and have been given proper authorization.

But the C.S.A. is not empowered to enforce its standards on either Canadian or imported electrical goods. This is the function of the electrical inspection service in each province—the Electrical Inspection Department of Ontario Hydro in Ontario.

Although it is illegal to advertise, display, sell or use unapproved appliances in Ontario, Keith Bellamy,



In actual practice these wires will never be submerged in water, but the ability to take a bath without damage is part of the testing procedure. A short would indicate faulty insulation.

Awaiting C.S.A. approval, these items suggest the scope of the Association's testing activities. Organs, water coolers, freezers, vending machines and ranges are included in the collection.



Hydro's chief electrical inspector and his staff of almost 200 have an overwhelming task in policing infractions because of the vast number of outlets and the limited number of people which it is practical to allot to surveillance of sales.

Greatly complicating the task is the fact that unapproved appliances and equipment may be imported into Canada so long as the duty is paid.

Working for the inspectors is the electrical industry itself, which is constantly on the alert and quick to provide evidence of infractions. In spite of all efforts, however, an estimated 10 per cent of electrical equipment sold in Ontario is unapproved.

In the words of Mr. Bellamy, "The safest and surest method of controlling the sale of unapproved and, therefore, potentially dangerous appliances is a well informed consumer who insists on the C.S.A. stamp of safety." He notes that in special circumstances, goods may be marked with Ontario Hydro's own inspection label, in which case their use is legal. But this is the only exception to C.S.A. approval.

Although best known for its work in the electrical field, the Canadian Standards Association is responsible for standards in other lines which, in some cases, extend to quality and performance as well as safety. For instance, most oil-burning equipment in Canada must be approved and stamped by the C.S.A. Recently, the Association undertook approval of industrial and commercial gas equipment. Domestic gas equipment approval is currently carried out by other agencies in Ontario and British Colum-

bia although C.S.A. approval is accepted in other provinces.

Recently, the Association adopted standards for linemen's belts, and is currently drawing up specifications for climbers, and heavy industrial rubber gloves. If recommendations of consumer organizations in Canada are followed, the Association will eventually become involved in a greatly increased variety of goods.

In essence, C.S.A. consists of a board of 18 directors with head office in Ottawa. This body appoints a five-man administrative board, currently chaired by Dr. W. P. Dobson, formerly Ontario Hydro's director of Research and the man after whom its new research laboratories have been named.

The administrative board, in turn, directs the work of the approval laboratory at Rexdale and smaller branch labs in Winnipeg and Montreal.

In practice, the manufacturer sends a sample of

ONTARIO HYDRO AND THE CSA



Irons were irons in the early 1920's when Ontario Hydro used this set-up to test small appliances. For several years the Commission was electrical approval authority for Canada.

THE history of the C.S.A. is intimately related to Ontario Hydro, and can be traced back over 40 years to two seemingly unrelated events in the year 1919.

In that year, at Ottawa, a group of engineers, contractors, manufacturers, distributors, and consumers of engineering products formed the Canadian Engineering Standards Association. The main purpose of the new group was to formulate standards which would assure, first of all, the safety of the consumer and, secondly, standardize the specifications of a wide variety of products.

The first project launched by C.E.S.A. was the preparation of a Canadian Electrical Code.

Meanwhile, in Toronto, the ever-increasing use of electricity was putting severe strain on the Inspection Department of Ontario Hydro, which was charged

by the province with the task of assuring the safety of electrical customers throughout the province.

At this point, every piece of electrical goods used in Ontario had to be inspected by Ontario Hydro to assure that it met the requirements set down by the Commission itself.

In an attempt to cut down the field work, Ontario Hydro, in 1919, established testing facilities at its Strachan Avenue research laboratories. Equipment meeting the specifications was then stamped with the Commission's approval and a licence granted to use the stamp on all goods meeting the original specifications.

For several years, the Ontario Hydro approval was the only one recognized in Canada. When the provinces, Ontario included, adopted the first Canadian Electrical Code, in 1927, the Ontario Hydro stamp was granted only to equipment meeting the code.

Since the H.E.P.C. stamp was the only one which assured that goods met Canadian Electrical Code standards, other provinces wrote H.E.P.C. approval into their codes, thus placing Ontario Hydro in the position of being approval authority for the whole of Canada.

It was not until 1940 that the Canadian Engineering Standards Association, later the C.S.A., took over the responsibility of approvals from the Commission. For the next 10 years, however, C.S.A. continued to use Ontario Hydro's Strachan Avenue facilities and staff.

In 1950, the C.S.A. procured its own temporary quarters and a staff of about 100—most of them Ontario Hydro employees willing to make the transfer. The big Rexdale Laboratory was occupied in 1954, and the C.S.A. staff has grown to its present strength of some 250 engineers, technicians, and administrators.

THE STAMP OF SAFETY

his goods to one of the approval laboratories, where it goes through a minute examination and thorough test to assure that it meets the standards set for that class of goods. Once passed, the manufacturer is then granted a licence to use the C.S.A. stamp on products manufactured to the same specifications, and in accordance with the report originally issued on the prototype submitted. Any changes in construction, even a new catalogue number, requires a new submission.

To assure continued adherence to the standards, C.S.A. maintains a check on the manufacturer and his products. The laboratory is completely self-

sustaining, charging the expenses involved to the manufacturer or importer.

The parent body is supported by an annual fee paid by sustaining members—manufacturers, distributors, consumers, utilities, and others interested.

A unique organization, specifically tailored to Canadian conditions where jurisdiction for safety rests with the provinces, the Canadian Standards Association has overcome regional preferences and jealousies to give Canadians the protection of the highest electrical standards in the world. Recent developments indicate that this protection will be extended to an ever-increasing variety of goods used by the Canadian consumer.



With his hands in the good rich earth, this Burlington nurseryman reflects on the benefits of electric soil pasteurization. Flats he is filling will raise healthier plants.

HYDRO HAS A GREEN THUMB

Electricity
is coming to the aid
of the nurserymen
through
soil pasteurization.

Have you ever wondered why some hot-house fruits and vegetables taste and look better than others of the same variety and vintage? Or why one begonia will look like a million dollars while another, equally well fertilized and attended, will have the appearance of a poor and distant relative?

The difference might be traced to Louis Pasteur and his method of partial sterilization through the use of heat. This is now the accepted method of treating milk, and it has long been recognized as a good way to rid soil of organisms and other ingredients detrimental to a healthy plant stand. But only recently has electricity made much of a contribution.

Until about a year ago, when a much improved electrical pasteurizing unit was introduced into Canada from Europe, nurserymen generally relied on steam or chemicals for cleansing soil. However, smaller growers could not afford the expensive steam equipment in-

volved and chemical treatment left something to be desired.

The need was there, but it was not until the new unit made its appearance that horticultural authorities grew enthusiastic about electricity. Professor Ralph Goodwin-Wilson of the Department of Horticulture, Ontario Agricultural College, ran several test lots of soil through the new device, and he found the results quite satisfactory.

"The actual construction of the machine is what makes it worth-while," reports the professor. "It has an automatically-controlled thermostat and stainless steel cross-plates to distribute heat more uniformly through the soil." Earlier methods of electrical soil pasteurization had lacked the essential element of control.

With the thermostat set at 180° F., the new unit will destroy all harmful micro-organisms, fungi, bacteria, weed seeds and insects the soil may contain. It will not affect beneficial matter. The result, of



With the thermostat set, this device will pasteurize half a cubic yard of soil in two hours—then switch off. Cross plates distribute electrical heat evenly.

course, is an improved plant stand, increased control over disease, particularly at the seedling stage, and a great reduction of the weed problem.

Professor Goodwin - Wilson stresses that soil pasteurization must not be confused with soil sterilization, which kills everything in the soil and leaves it useless for growing purposes.

The new electrical unit operates at about 30 amperes, requires a 230-volt, three-wire system, and has a capacity of one-half cubic yard of soil—enough to fill about 36 "flats." It costs about \$600. Each treatment takes something less than two hours.

To date, there are about a score of these electrical pasteurizers in use in Southern Ontario. Bill and Hank Spaans of Unionville, who do a thriving business in seedlings, particularly begonias and primulas, are among the users.

"Previously," says Hank, "we either didn't pasteurize or we tried to do it with chemicals. In deciding to invest in hydro-pasteurizing, we felt if the weeding time saved would enable us to increase production by even five per cent, then the apparatus would be a good buy."

Arrangements are being made to produce the new device in Canada, and the manufacturer even hopes to bring out a miniature version for householders who would like to establish a "green thumb" reputation.

meanwhile

back at the ranch . . .

Cattle and other livestock are getting a charge out of the latest application of Hydro on the farm—electric fences. Energized fences are not new of course, but, until recently, batteries were the only source of power permitted for this use.

These were relatively inconvenient, their effectiveness varied with the state of the battery, and regular recharging was necessary.

For these reasons, the Ontario Federation of Agriculture requested that fences operated from the regular electrical supply be authorized.

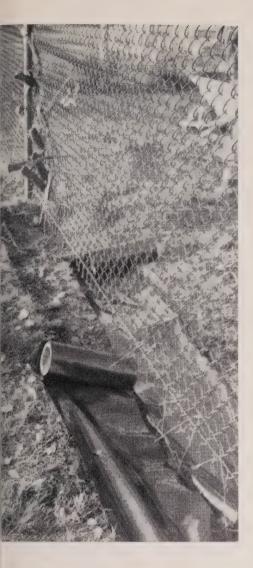
As the result, C.S.A. approved, permanently-wired 110-volt units are now available. They must be installed by qualified electricians, and must be passed by Ontario Hydro inspectors, but they are safe, dependable and convenient.

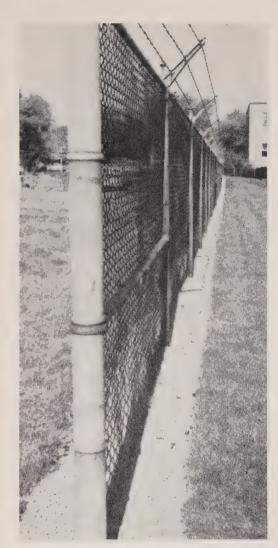
As the Rural Co-operator recently pointed out, "Home-made fencing devices are strictly another matter, and are illegal. . . . We cannot, as farmers, countenance the use of these or any other gimcrack electrical devices which could, at best, be a continuing source of worry to farm organizations and, at the worst, cause government to once again declare illegal the use of Hydro-powered fencing units."



FIGHTIN WEED WIT PLASTI

Ontario Hydro fores
is using polythe
to prevent weed grow





From left to right, this "before-during-and-after" sequence tells the story of plastic growth control. A neat fence line and easier maintenance are the rewards.

A Hydro forester has come up with an idea which seems likely to eliminate much of the cussing normally associated with the hand trimming of grass and weeds growing in hard-to-reach locations such as along fence lines, between patio stones and through the crushed stone surfaces of driveways and parking areas.

"Why clip weeds by hand when you can prevent them from growing?" asks F. V. Sanders, forestry supervisor in Niagara Region—and he is putting his theory to the test on Commission property. He uses a thin black plastic sheet material called polythene, which is simply laid on the ground and covered with two or three inches of crushed stone. It prevents sunlight from penetrating, and nothing can grow through it. The

manufacturers believe that this is the first time their product has ever been put to this use.

Last year the polythene was applied along fence lines at transformer stations in Hamilton, Elmira and Rockwood.

"We're convinced polythene can serve a purpose," Mr. Sanders told Hydro News. "But we're reserving final judgment until we've observed the effect on the spring growth."

If the plastic works out, and the consensus is that it will, it will be submitted as a possible weed and grass deterrent for use throughout the Commission. Research people say polythene is good for 20 years.

Chemical soil sterilizers are available, but these have to be applied regularly, and they cannot be used under fences because the chemical wanders and will not permit straight-line application.

Referring to the use of polythene at the Hamilton transformer stations, Mr. Sanders says:

"This resulted in considerable saving in the man-hours devoted to hand trimming. Sometimes we couldn't keep up with the trimming, and the fences got to look pretty ragged. The polythene made them as clean as a whip."

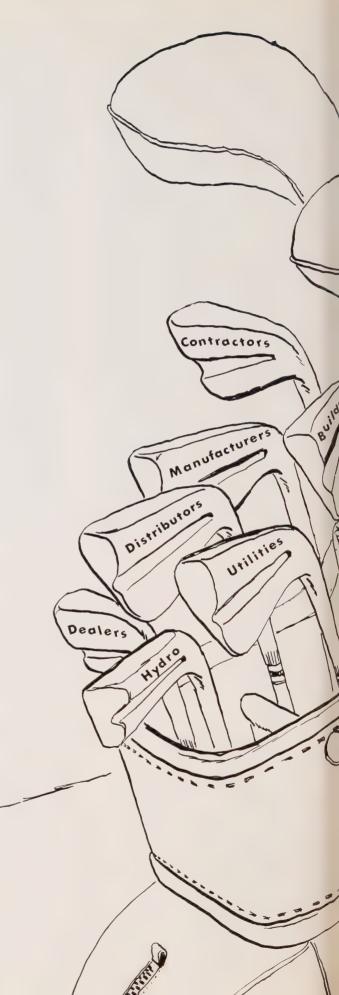
Polythene is also arousing considerable interest among gardeners since it eliminates the need for cultivating. The material is laid on the soil and seeds are planted through holes in the plastic. Astonishingly high plant yields result because weeds, without sunlight, just don't stand a chance. As an added bonus, the material stops frost penetration.

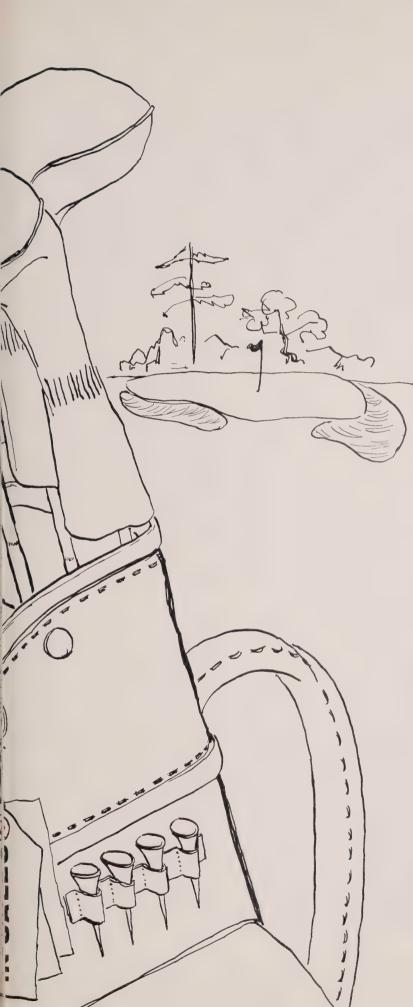
UNITED WE SELL

to win a golf match
and the same might be said
of the vital game of sales.

Each facet of the electrical industry
has a part to play.

Working together, they can be
just as effective as a
set of perfectly matched clubs.





CONCLUSION

Last month we used Mrs. Smith's new electric clothes dryer and the Bronze Medallion subdivision of Peel Village to illustrate how an electrical sale can ripple across the entire surface of the electrical industry. It was our intention to show that a united approach to sales promotion is both practical and desirable, since the industry as a whole tends to grow healthy on the same sustenance which nourishes its parts.

Now we will look at some of the ways in which the co-operative approach is actually being achieved.

Assuming that the best starting place is the closest to home, let's glance for a moment at the sales approach being adopted by Ontario Hydro, in conjunction with the associated municipal electrical utilities.

Diversified load-building is the objective here, and rifles rather than shotguns are being employed to hit those specific targets judged to be the most desirable from the standpoint of utility operation and revenue. In the interests of maintaining the low rates now prevailing, Hydro is attempting to attain greater utilization of existing plant by reducing the peaks and filling in the hollows in the demand curve.

To this end, market analysis is being emphasized and research information disseminated to the groups concerned. And the cooperation of manufacturers, distributors, dealers, contractors and other sales allies in the industry is being sought wherever they may be concerned in a particular aspect of the promotional campaign.

The most obvious area in which this co-operative approach to sales promotion has been carried out is in the field of specific appliances. Few Ontario citizens can have escaped the broadsides fired during



the last 16 months, aimed at increased sales of freezers, clothes dryers and supplementary electric heating.

Another striking example of sound planning and co-operative promotion is to be found in the field of electric home heating. Interest in this form of heating has only existed in Ontario since 1958, when Ontario Hydro rescinded restrictive rates on energy used for this purpose. The organization and methods adopted at a time when public acceptance could make or break the market, illustrates how much can be achieved through industry-wide participation.

Under the leadership of Ontario Hydro, the Electric Heating Association was set up as the coordinating body. With a membership composed of municipal electrical utilities, electrical contractors, manufacturers and distributors of electrical heating equipment and thermal insulation, and Ontario Hydro, the association could act effectively on behalf of the industry.

Standards were established to ensure public satisfaction with electric heating systems and installations. Special training courses were set up to help acquaint electrical contractors with these standards, and meetings were held across the province to enlist the support of all concerned.

At the consumer level, the Association concentrated on familiarizing prospective homeowners with the Triple Seal of Quality—a guarantee on the part of the manufacturer, contractor and Electric Heating Association that the heating system meets the required standard for electric heating.

In a year-end review, J. Herbert Smith, President, Canadian General Electric Company, had this to say of electric heating:

"A strong industry-wide team emerged during the year that has set this new industry on the path to vigorous maturity. In one province alone it has been forecast that there will be 100,000 electrically-heated homes within a decade."

While electrical home heating in Ontario has a long way to go before it achieves the degree of acceptance it has attained in the United States, many experts there will concede that the industry-wide approach adopted in this province is sound and much to be preferred over the undisciplined development which characterized the early days of electrical heating south of the border.

Another active and dynamic force behind the electrical industry's efforts to achieve maximum promotional effectiveness through co-operation, is the Electric Service League. This is the organization which introduced the Red Seal wiring program in Ontario and is now focussing province-wide attention on the Gold and Bronze Medallion standards of electrical excellence. It is also responsible for the certification of these standards, and plays a leading role in promoting "Electrical Week."

The Electric Service League of Ontario maintains full-time field representatives in all sections of the province and, to date, 19 local chapters have been formed. In the broadest sense, the League has as



its objectives the raising of the standard of electrical living. Emphasis is placed on the chapter level on the theory that no promotional program directed on a provincial basis can be completely effective unless it is translated into terms of local needs—and solutions developed to suit those needs.

Associations have been instrumental in enabling the electrical industry to present a united front in sales promotion. Dean Steadman, manager of the Electrical Bureau of Canada, said recently that "Associations act as a continuing conference table around which the various segments of the industry meet as equals to explore new promotions of industry-wide significance; develop adequate standards; create a core of promotional material, act as an exchange centre where participating corporations can share their promotional experiences and integrate the various regional applications of a program."

The Canadian Electrical Manufacturers' Association represents more than 120 leading manufacturers, and relies to a considerable degree on the Electrical Bureau of Canada, its promotional wing, to plan and implement Canada-wide promotional campaigns.

Among the most outstanding of the Bureau's 1962 activities is the publication of a chain of "electrical newspaper tabloids," going to more than 300,000 Canadian homes, four times a year. Under this plan, believed to be unique in the world, C.E.M.A. members absorb the cost of the first 200,000 copies. The utilities pay for additional copies and select the postal "walks" where they will be distributed. Space is provided for local contractors and the utility to place tie-in ads in the hometown edition.

Also active at the association level, on a national basis, is the Canadian Electrical Association. This group, formed in 1891, has become one of the more important electrical organizations in North America.

Composed primarily of utilities, the C.E.A. also includes manufacturers. It is concerned with all aspects of improved power production, distribution and service from the technical aspects to sales promotion and business ethics.

Further evidence of the effective co-operation which has been achieved between the various groups comprising the electrical industry is to be found in The Canadian Electrical Council. Composed of representatives from the various associations, it was formed to act on problems common to the electrical industry. It helped coordinate National Electrical Week across Canada.

Impressive as the achievements in co-operation have been, it would be guilding the lily to imply that the electrical industry now speaks with a single strong voice on all matters relating to sales promotion, or that every member of each group is pulling his full weight.

But the industry is aware, as never before, that it is both practical and profitable to work as a team. And a degree of co-operation is being achieved which was hitherto unknown.

UTILITIES UNITE TO PROMOTE

Load-building and sales promotion discussions have been prominent on the agendas of the Ontario Municipal Electric Association meetings in all parts of the province—but District 4, which includes the densely populated Metropolitan Toronto area—goes a step further. Most of its member municipalities are co-operating for the fifth consecutive year in a wellrounded advertising and load-building program.

A budget of \$50,000 has been alllocated for 1962, and participating utilities will be assessed on the basis of their domestic revenue. Individual contributions will range, therefore, from about \$10 to more than \$17,000.

Conditions such as those prevailing in the area represented by District 4, where there is a concentration of purchasing power well served by highly effective mass media, are particularly appropriate for a co-operative undertaking of this sort. And the extremely high percentage of district utilities participating in the program attest to its past effectiveness.

A glance at the proposals for this year's program reveals that newspaper and television advertising will account for the major share of the budget. Other important features scheduled include support of the National Home Show, the Anne Allan radio series, and prizes for the Metropolitan district Public Speaking Contest. Advertising subjects will include Gold Medallion homes, electric water heaters, electric dryers, and the low cost of electricity.

The District 4 program expenditures are kept to a minimum by selecting the most appropriate material available through Hydro's province-wide load-building activities, and by using the advertising agency machinery already set up for the provincial campaign.

The District 4 program is administered by a Cooperative Advertising and Load-Building Committee, chaired this year by E. B. Higgins, a councillor of the Village of Swansea.

MARCH, 1962 15



Slashed through the northern wilderness, this transmission line right-of-way links Hornepayne with Ontario Hydro's Northwestern network at Manitouwadge. Enormity of job is suggested by scar on far horizon—a continuation of the line.

Helicopters play leading role in northern construction drama.

D_{URING} the post-war period the transmission lines of Ontario Hydro have been extended in every direction so that, when another remote northern community is linked with the provincial grids, it no longer makes the headlines.

But the way they built the line between Hornepayne and Manitouwadge was definitely front page news—they did it almost entirely from the air. It was the first time helicopters had been used so extensively for this purpose in virgin wilderness where temperatures plunged to 50 degrees below zero, snow piled to a depth of four feet in the bush, and high winds brought great drifts and high chill factors.

Only 50 miles separate these two northern communities, but much of it consists of almost impenetrable forest, muskeg and water. Time and economics ruled in favor of the air lift over conventional methods which involve the use of roads and work camps along the right-of-way.

Ontario Hydro's advance construction forces moved into the area last November, but heavy work on the 44,000-volt, wood-pole line only commenced in January. George Mackie, zone manager in charge of the project, confidently expects that, barring bad weather and unforeseen difficulties, the project will be completed before the spring break-up closes a swampy hand on operations.

As preparations proceeded, everything was geared to the helicopter. A big Sikorsky S-58D, a 12-passenger craft rated at 1,525 horsepower, was added to the Ontario Hydro fleet, supplementing an S-55 and two smaller Bell machines used on the job.

Contracts were let to "slashers", charged with cutting and clearing the 100-foot-wide right-of-way, much of which was through territory where few humans had set foot. Experienced ground crews were assembled, and helicopter personnel took training flights carrying wooden poles, up to 65 feet long, complete with cross-arms and insulators. They drilled as well in the art of air-lifting rock buckets which weighed 3,600 pounds when loaded. This fill material would be needed to support the poles in muskeg areas.

Pole yards were set up at both ends of the line, a rock and gravel pit made ready in spite of the deep frost, and radio communication was established between the pole-yards, the helicopters and the ground crews.

While this was going on, Hydro surveyors made their slow and tedious way through the wilderness, blazing the right-of-way. Landed by helicopter, they worked along the line by day and returned by air to their base each evening.

Survival camps were placed at strategic locations along the route so that no crew could ever work more than one and a half miles away in the event that the aircraft were grounded by bad weather. The camps contained a stove, cots, bedding, utensils



to the versatile helicopter.

LINE-BUILDING FROM THE AIR

by Horace Brown

and food for 15 men for four days, together with a

supply of fuel.

Only when the operation had been prepared and charted with all the precision of a military operation did construction commence. Ground crews soon grew used to the daily flight to and from the job while the pilots and observers worked as a team to pick up the numbered poles and carry them to their predetermined destination on the line.

As the pilot worked his craft into the right-of-way, his 65-foot rotor blades raising cyclones of snow, he was "talked-in" by his observer so that the poles came



This inquisitive northern native flew down to welcome photographer Wilson the moment his 'copter touched down.

to a miraculous rest in or beside the holes dug or blasted for them by the ground crews. These men worked swiftly and efficiently to secure the guy wires and otherwise prepare the poles for stringing.

While the big "chopper" laid its daily clutch of poles, the smaller Bell helicopters

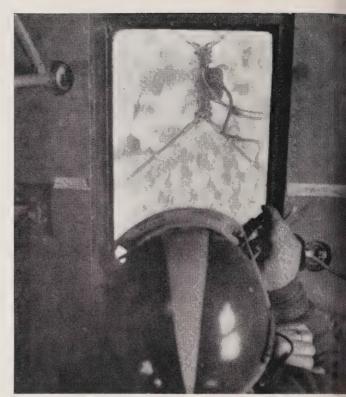
were stringing conductors. Soft-spoken Bill Mc-Pherson, line superintendent, kept on top of the job so that it seemed to move effortlessly from one phase to the next. Aiding was Ray Freeman, cost planning engineer, who rode herd on costs and doubled in brass as the anchor voice on the radio network.

Because everything hinged on the helicopters, he kept a hopeful eye on the weather. And, by the middle of March, only one hour in ten of potential flying time had been lost due to bad weather or for aircraft servicing. Scheduling was such that when adverse weather did occur, ground crews were able to work at other tasks. Some five miles of footings at either end of the line, accessible by road, were completed by conventional methods.

As the job was drawing to a successful conclusion, George Mackie had this to say:

"I am convinced that helicopter construction for sub-transmission voltages—anything up to 44,000 volts—is definitely here to stay, where conditions as to terrain and accessibility warrant. Adaptations of uses discovered on this and other similar projects will have a definite application to higher voltage transmission lines.

"The success of this project can be attributed to the initiative, drive and team spirit shown by the men who have built this line against the odds of the wilderness and under seemingly impossible conditions."



Give up? It's a 'copter crewman keeping an eye on the giant rock bucket slung beneath his machine. Access to most of the line was by air alone—practical only in winter.

Ground crews were shuttled to and from the job by aircraft each day. Walkie-talkie carried by groundwork foreman Cec Merrylees keeps him in touch with helicopters.



Well-stocked survival shelters, such as the one discernible here, were placed at strategic locations along the right-of-way as a precaution against possible grounding of aircraft by weather.

Never before have helicopters been used so extensively for linebuilding under northern winter conditions. A Bell 'copter is shown here stringing cable. Big Sikorsky S-58D did heavy work.

HORNEPAYNE JOINS THE SYSTEM

The northern airlift, described on these pages, is aimed at linking Hornepayne, a divisional point on the C.N.R. trans-continental route about 200 miles north of Sault Ste. Marie, with Ontario Hydro's Northwestern System at Manitouwadge, a small copper-mining community some 50 miles to the west.

The 1,400 citizens of Hornepayne have been members of the Hydro family since February, 1955, when the Commission took over the electrical supply at the request of local officials. It had become obvious that the C.N.R.'s generating facilities would soon be inadequate to meet the demand. Two diesel-electric units were installed at that time, and the distri-



bution system was rehabilitated.

As the hour approaches when Hornepayne will be linked with the Northwestern grid, its citizens are hopeful that the coming of more economical hydro-electric power will mean the chance of obtaining secondary industry. Certainly they will enjoy the full advantage of modern electrical living for the first time.

A CONSUMER service technician at St. Catharines area office and a veteran of 30 years with Ontario Hydro, Mark Russell still retains fond memories of the years he spent as an oiler on the lake freighter "Taylor," now named the "Algosoo."

The loving care he lavished on her engines is reflected in a mechanical masterpiece enshrined in the basement of his home. It is a working model of the ship's 1,600 horsepower triple expansion marine engine—authentic down to the last valve and grease cup. Well calculated to delight the heart of an engineer, Mark's masterful

model represents over 3,100 hours of devoted labor.

Most of its incredible detail has been reproduced from memory. Built on a scale of \(^3\)/4 inches to the foot, it develops three horsepower at 100 r.p.m. and 100 lbs. pressure.

Mark drew up his own plans, did all the proportioning and dimensioning, and machined every component. The model contains well over 1,000 parts and, except for the castings, for which he prepared the patterns and core boxes, each was made in Mark's modest machine shop. They include 485 nuts, 440 studs, 205 cap screws, 20 grease cups and eight valves. It cost about \$200.

With its accessory equipment including an auxiliary reversing engine, a condenser for engine exhaust steam, a water feed pump, air pump, a self-oiling system, oil reservoirs and pressurized cylinder oil lubricator, the model is a joy to watch in action. Tolerances on many of the parts, including the bearing journals, were held within 0.001".

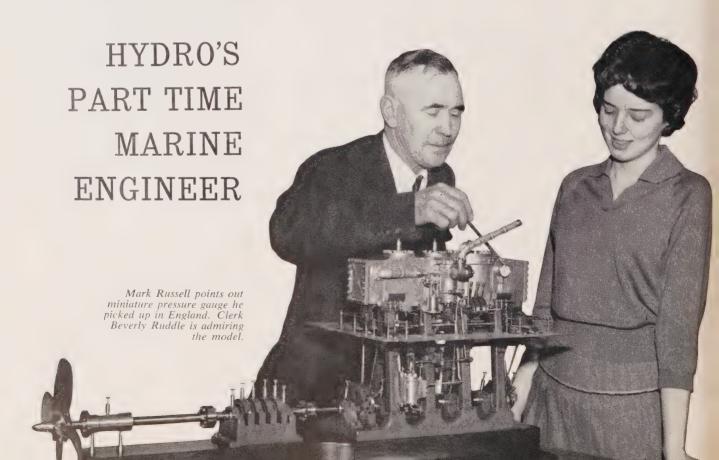
Asked what he considered to be the trickiest part of the project, Mark thought that the crankshaft eccentrics were the hardest to cut. He jokingly referred to a minute pressure gauge which, to locate, he had travelled to England. He confessed that there were other, less important reasons for the trip.

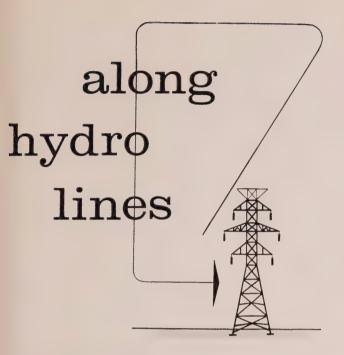
Mark also built the twin boilers powering the engine, and he sheepishly admits to trying methylated spirits and oil as fuel before discovering that electricity was best. The boilers, with immersion elements installed, operate at up to 50 p.s.i.

This is Mark's second model marine engine project. He reluctantly parted with the first, about half the size, after cash and cajoling on the part of a marine engineering firm.

While proud of her husband's engineering ability, Mrs. Russell is a realist. She sees carpentry as a more practical hobby and, after the fashion of her sex, can translate those thousands of man-hours into household achievements.

"Imagine," says Mark, I believe she would trade a triple expansion marine engine for cupboards and coffee tables!"





Three Million Manhours Without a Lost-Time Injury

Winning National Safety Council awards is becoming a habit with Ontario Hydro's Eastern Region. The first public utility group in Canada to win an award for a million manhours without a lost-time accident, the Region has since added a second and third award. There are approximately 1,000 employees in the Eastern Region.

Electric Service League Report



In his address at the annual meeting of the Electric Service League of Ontario, President James A. Blay, director of Public Relations for Ontario Hydro, said that 1961 had been one of the most successful years in the long history of the League. He noted that 206 new Gold Medallion and 1,564 Bronze Medallion homes had been certified during the year—a 200 per cent increase over 1960. In addition, 26,043 Red Seal homes were certified, as compared with 23,259 in 1960.

Mr. Blay recommended that steps be taken to augment League membership by enlisting the support of

independent distributors, electrical contractors and manufacturers who are not members of the Canadian Electrical Manufacturers' Association.

The executive, shown in the photograph, was reelected for a second term. Left to right are: Harry Foy, manager and secretary-treasurer; T. J. Curtis, 2nd vice-president; Mr. Blay, president, and A. M. Doyle, 1st vice-president.

North York Ratepayers Learn about Underground

However uninformed the general public may be about underground distribution, there is at least one small group of North York ratepayers with a basic understanding of the problems involved in this topical but controversial subject.

They are the people who attended a recent general meeting of the North York Community Council, made up mostly of ratepayer groups, at which a panel of experts was assembled to discuss underground wiring. North York Hydro Chairman A. K. Meen was among the panelists, who included an architect, a contractor and consulting engineers.

In answer to one question, architect Ebby Dashkin said he could not imagine an architect preferring overhead to underground distribution construction. He said it was like asking a clergyman if he was against sin—but he acknowledged that there were economic considerations.

Consulting engineer Jack Chisvin believed that underground was less costly in the long run—having regard for ice storms, tree trimming, traffic accidents and other hazards.

Taking issue with Mr. Chisvin, Mr. Meen said that he was not convinced that underground construction was cheaper from any point of view. He cited costly repairs and longer outages as the reasons some authorities believed operating and maintenance costs were actually higher.

Mr. Meen said his experience had shown that there were so many variants involved that it was difficult to equate system A with System B, and it was up to the individual utilities to assess underground as it pertained to themselves.

The North York Hydro chairman revealed that his utility planned to provide underground wiring to 9,400 housing units during the year. He estimated the extra cost of underground, per detached unit, at \$220, and noted that rebates were being offered, depending on the electrical equipment used by the home owner, of up to 100 per cent for Gold Medallion homes.

Contractor Joseph Berman believed that if the home buyer were given the choice between underground wiring or \$200 worth of improvement in the home itself, he would choose the latter. Under present market conditions, he contended, the home buyer in

the medium price range could not absorb the extra

cost of underground.

In summing up, the panel moderator said that there was unanimous agreement as to the desirability of underground wiring, and while arguments could be found against it, sooner or later it would become the enveloping trend.

The meeting broke up on a suggestion from the floor that overhead wiring "was for the birds."

Meter Department Supervisor



Few utility men can outdo Joe Douglas of the Scarborough P.U.C. when it comes to meter experience, and his fellow employees took advantage of his 40th service anniversary to show their esteem. The amiable meter department supervisor was guest of honor at a brief but warming gettogether.

Mr. Douglas commenced with Scarborough Hydro as a lineman in 1922, and when the meter department was formed, in 1928, he was its sole representative. With some 67,000 meters on the system at the present time, his department now has seven employees.

Active for many years in association work, Mr. Douglas is president of the Central Ontario Metermen's Association, and is helping to establish a metermen's workshop program within the A.M.E.U.

Hydro Folk are Good Neighbors



Public relations is no mystery to the employees of Sandwich West Hydro—they practise it every day just by being good neighbours. Their strong sense of civic responsibility is manifest in the photograph. Proudly exhibiting the utility's record in a recent Community Fund campaign are David Lippold, left,

line foreman; Clayton Lajeunesse, lineman; and Miss Gayle Jones, clerk.

Per capita, the employees are among the top contributors in the Windsor area. And many of the utility's community-minded employees are active in Cubs, Scouts, children's aid and voluntary Red Cross work. Nearly everyone donates blood at regular intervals.

As Manager David Pope says, "We are very proud of our staff."

municipal briefs

Who should pay for underground wiring, and how, remain moot points among the utilities. In Brampton, new home owners in subdivisions with underground distribution sign a contract agreeing to pay a minimum power bill of \$7.50 monthly. This is on a trial basis, but H.E.C. Manager Vern Breen reports no customer dissatisfaction. "This way," he says, "ratepayers in other areas of town are not required to subsidize underground services of no benefit to themselves." In Galt, the P.U.C. recently cancelled plans for its first major experiment in underground wiring when council would not support handling the extra cost on a local improvement basis.

Official registration at the 53rd Annual Meeting of the O.M.E.A. - A.M.E.U. was 1,116. This compared with 1,192 in 1961.

Peterborough P.U.C. has joined the ranks of utilities with a full-time sales promotion representative. He is Robert Webb, who has been a meter reader with the utility for the past eight years. He will emphasize the promotion of electric water heating, improved home wiring systems, and electric home heating.

Toronto Hydro recently reached a three-year agreement with the union representing some 700 of its employees. It provided a four per cent increase for 1962 and two increases of eight cents an hour in the next two years. Sarnia Hydro announced a wage settlement which provided for a five cent hourly increase in 1962 and a seven cent increase for 1963.

Woodstock P.U.C., meeting in its new headquarters building for the first time, announced the start of a fluorescent lighting program which will cost an estimated \$48,000 and take three years to complete.

The A.M.E.U. Rates Committee was informed by Ontario Hydro at a recent meeting that it is permissible to use a single meter for both normal and home heating purposes providing the residential rate structure is such, in the Commission's opinion, that the end rate is adequate to recover the cost of such energy. Utilities which have already received permis-

sion to supply house heating energy as part of the normal residential service, and without a general rate adjustment, include: Sudbury, Dresden, Thornbury, Mitchell, Stratford, Burk's Falls, Port Elgin and Toronto.

Bad debts are the least of their worries at Ridgetown P.U.C. In 1935, E. B. Easson, then Ontario Hydro's municipal accountant, set up a general ledger reserve for bad debts of \$275. Reviewing the accounts this year, R. A. Holliday transferred the bad debt reserve to surplus—no bad debts had ever been contracted.

Brockville Electrical Bureau recently held an electrical heating exposition at which the case histories of 22 electrically heated homes in the Brockville area were on display. These consisted of photographs to which were attached such information as floor area, volume, and a chart showing actual heating costs up to the present.

Kingston P.U.C.'s file on identical bids with the Department of Justice, Ottawa, will be fattened considerably as seven new cases are being forwarded. The identical bids were submitted on items ranging from chlorine to transformers. Seven out of eight bids for open type "cutouts" were identical.

Bertram Merson, secretary-treasurer of the Municipal Hydro-Electric Pension and Insurance Committee, has been invited to attend a meeting of the Stamford P.U.C. in order to explain the supplementary benefits of the Plan. A representative of the group handling the Township employees' pensions was also invited so that a comparison might be drawn.

York Township Hydro held an exhibition of the latest major and small electrical appliances on the theory that people would enjoy the opportunity to examine them at their leisure, without the presence of salesmen. Hydro staff were on hand to answer questions.

The value of suitable identification for metermen, inspectors and other utility personnel calling on customers is underlined by the recent arrest of a Toronto man. He was sentenced to five years in the penitentiary on 22 charges. Posing as a Hydro employee, he rifled purses and tills after sending the housewife or clerk downstairs to test a switch.

Eight Weston P.U.C. staff members have completed a 22-week Rescue Training Course sponsored by the Emergency Measures Organization. Speaking for Council, Mayor George Bull said: "This is certainly a very useful element in our town affairs. I personally feel more confident and comfortable now that we have a trained rescue team."

Personalities in the news include *Graham Farnell*, who was appointed secretary-treasurer of Georgetown Hydro, succeeding *Mrs. Olive Reid*. A veteran mem-

ber of the Georgetown commission, he resigned to take the new position. R. Allan Horwood has been appointed superintendent of Richmond Hill Hydro. He replaces Verne Snider, who recently became manager of Hanover P.U.C. Mr. Horwood had been with Ontario Hydro since 1944. Harvey Philip has resigned from Oakville P.U.C. Until amalgamation, he had been general manager of Trafalgar Hydro.

New Renfrew Manager

Kenneth S. Gemmel, who recently retired after 42 years with Ontario Hydro, has been appointed manager of the Renfrew Hydro-Electric Commission. He succeeds Joseph Beauchamp.

Mr. Gemmel has worked in the Renfrew area since 1950, when he became plant superintendent of Ontario Hydro's Chenaux Generating Station.



He officially retired in July, 1961, but at that time he was on leave of absence in Pakistan, where he spent a year as plant superintendent of the 160,000-kilowatt Warsak generating station built under the Colombo Plan.

Born in Toronto, Mr. Gemmel commenced his career with Ontario Hydro in 1919 as an operator at the Eugenia plant.

IN THE LOOKING GLASS

. . . as others see us

Customers come first

Mr. W. Ross Strike, Q.C., Chairman of the Hydro-Electric Power Commission of Ontario, in an address here, gave the electrical industry some sound advice. It is equally sound for all other industries and businesses. It is quite simple. The endeavor must be to provide the customer with what he wants.

We suspect that Mr. Strike here is getting at a fundamental weakness in the industrial and business pattern on this continent. There has been too much emphasis on producing commodities in the hope they will be profitable and then trying to convince the public that it needs them—or even that it should buy them whether or not it needs them. Or, to produce goods and then try to create a demand for them. . . .

The tremendous success of Ontario Hydro itself is proof of Mr. Strike's advice. Ontario Hydro and the local commissions always have kept the needs and wishes of the public before them. It has sought to satisfy these needs in the most efficient and

economical way possible.

It is, of course, in a peculiar position. Its owners and its customers are the same people. Its customers, in their capacity as owners, soon would complain if it did not meet their needs. Hydro's shareholders are its customers, and their dividends come in the form of steady power at low rates. That policy has spelled success.

The Windsor Star

A letter from Saskatchewan

This morning I read the article in the January "Motor Truck and Coach" (based on "Baby Its Cold Outside," Hydro News, November, 1961) outlining your opinions on garage storage. They say it is easy to agree with people that agree with you, and I would just like to support the opinions expressed in this article.

We operate over 200 trucks out of our thirty branches throughout Saskatchewan. These come in all sizes from one-tons to tandems and trailers, and our experience tallies exactly with yours. We have a few garages that were built about 40 years ago when we first started using trucks, so we only store about 10 per cent of our vehicles inside or covered. The only accommodations of any kind that we have built in recent years have been small two-stalled garages so we can get vehicles in out of the weather to work on them, wash them, etc.

We equip all of our trucks with the standard plug-in engine heaters, and we use some battery warmers. At least 98 per cent of our trucks have to start every morning because we operate with practically no spares. Most of the starting trouble we have comes from driver carelessness in plugging in. When that happens we use booster batteries and cables. . . .

I just thought you would be interested in my confirmation of your experience with garages.

A couple of years ago there was an article in "Bus and Truck Transport" outlining your policy on truck replacements. We keep detailed reports on all our vehicles and trade our trucks in on a regular basis. . . .

You will be interested to know that I could relate our figures almost exactly to yours, so that your article served as confirmation of our trade-in policies.

We want to thank you for the assistance provided by these two articles.

N. E. Huston, Production Manager, Saskatchewan Co-operative Creamery Assoc. Ltd,

Safety Drive Launched By Construction Group

In co-operation with Ontario Hydro, the Construction Safety Associations of Ontario are conducting a campaign to prevent the fatalities and serious injuries which can result when workmen or their equipment come into contact with electric power lines.

A small, pocket-sized card listing the names and telephone numbers of Ontario Hydro line superintendents in all eight regions was mailed to contractors and municipalities as the authority they should contact before working in the vicinity of Ontario Hydro power lines.

The Operating Engineers' Branch of the Ontario Department of Labor is also attaching these cards to each operating engineer's license. And the Associations have issued cab stickers, containing similar information, for mounting in the cabs of construction equipment as a reminder to keep clear of overhead lines and other utility property.

Contractors Win Awards



This happy group of electrical contractors is composed of regional winners in the contest conducted in conjunction with "Operation Heatwave"—the campaign held earlier this year to promote the use of fixed supplementary and auxiliary electric heating equipment. Each is \$250 richer as the result of leading his region in the number of installations.

Gordon Marshall, president of the Electric Heating Association, is shown making the presentations. Grand prize winner was Nelson Moore, Sudbury, second from left. He won an all-expense paid trip for two to the National Electric Comfort Heating Exposition in Chicago.

Nuclear Exhibition Slated for Ottawa

The Canadian Nuclear Association is holding Canada's first nuclear exhibition, in conjunction with a conference on heavy water reactors and radioisotopes, May 28-30, in Ottawa.

This exhibition, combined with a program of technical and management papers and panel discussions, is aimed at a wide dissemination of technical information and at stimulating trade in the nuclear field.

OFF THE WIRES



Continuing the vital work of promoting safety among utility personnel, the Electrical Utilities Safety Association has been holding rallies across the province under the banner "Safety Stampede." And while the conventional Schaefer-Prone method of resuscitation continues to be standard procedure with the Associa-



tion, the heart-lung, or "mouthto-mouth" technique is also being

taught.

Jack Campbell of the Medical Supply Company, using a manikin with a moveable head and chin, and with a pliable skin-like covering, has demonstrated the method before some 600 utility men at various "stampedes" this year. His dummy just happens to resemble an attractive young lady, and it would be unreasonable to suppose that this has anything to do with the enthusiasm the linemen have displayed in learning the technique.

A story gleaned from the Finanrial Post has a moral for exectives dedicated to the complirated psychological testing of prospective employees.

The firm in question needed a esearch executive, and applications were received from a ccientist, an engineer and an economist. Who to choose? Each

applicant was given a stone, a piece of string and a stop watch. Then he was told to measure the height of the company's building.

The scientist climbed to the roof and carried out an experiment in physics. Tying the stone to the string, he lowered it until it brushed the ground. Then he swung it, timing each swing with the stop watch. From his crude pendulum he was able to report the height of the building at 200 feet—give or take 12 inches.

The engineer threw away the string, dropped the stone from the roof, and timed its fall with the stop watch. According to the laws of gravity, he said, the building was 200 feet high—give or take six inches.

The economist, leaving the string and stone behind, was only gone a few moments when he returned to report that the height of the building was precisely 200 feet. How did he know? He gave the stop watch to the janitor in exchange for the building plans. He got the job.

In spite of the many technological improvements continuously being adopted, it looks as though the electrical utility of the future will have plenty of "bugs." In fact, with the recent unveiling of a radio transmitter powered by bacteria, scientists in the United States foresee the possibility of whole cities being lighted with the aid of harmless bacterial bugs.

The radio is described as being able to transmit 15 miles with electricity generated by bacteria feeding on sugar in a seven-inch-long test tube, which also contained sea water. Civilian scientists, who developed the

device for the navy, say that virtually any organic material, such as sawdust, leaves or sewage, will serve as "feed material" for directly converting chemical energy to electricity with the catalytic aid of bacteria. Some believe that the power needs of entire communities may eventually be supplied by this method.

Aside from lightning bugs, we had overlooked the insect potential. But, no doubt, the long range planners have bugs on the drawing boards and will put them to work "when the cost proves competitive with power produced by conventional methods."

An important facet of public relations consists of being a good citizen, and it is hard to imagine anyone doing a better job of it than George Phillips. George has been an employee of Smiths Falls Hydro for more than 30 years, and his fine civic record came to our attention in a news clipping announcing his appointment to the Grand Chapter of Royal Arch Masons of France.

This is a lifetime appointment and a very high honor in the world of Masonry. But Mr. Phillips finds time for other activities of benefit to his community. He is campaign chairman of the local Red Cross Society, president of the Smiths Falls branch of the Cancer Society, a member of the Public School Board and treasurer of the local recreation committee. He is also on the board of directors of the Ontario Recreation Association.

All in all, Mr. Phillips seems to substantiate the theory that only the busy man can find time for those extra tasks so vital to the welfare of a community.

People who like to get a lot out of living choose



A similar advertisement appears in the May edition of Reader's Digest

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Details commence on page 8.



MAY, 1962



They Come To Learn

Inquisitiveness is a must where Tamanna Khan is concerned. He has to learn as much as he can about Ontario Hydro methods in the few short weeks he can stay with the Commission under the Colombo Plan. A graduate in electrical engineering from Dacca University, Tamanna works for the East Pakistan Water and Power Authority. He is shown examining layout of Manby T.S. with Ivan Belford, foreman. Details of the two-way trade in Hydro know-how commence on page two.



Gastronomical Re-run

There were some strange "goings-on" in Stamford recently, and this alert photographer was on hand to record them on film. "Cooking Customs Over the Century" was the occasion, at which the local I.O.D.E. Chapter re-enacted the world's first all-electric banquet — complete with authentic costumes of the period. The original repast was consumed in Ottawa, in 1892, and attracted considerable comment in the newspapers of the day. A description of the gastronomical re-run will be found on page six.

MAY, 1962 ONTARIO HYDRO NEWS

CONTENTS

- 2 Export Trade In Hydro Know-How
- 6 Culinary Flash-Back
- 8 Public Speaking
- 12 Hand Behind The Fireworks
- 15 Light Treasure
- 16 Symposium On Distribution
- 18 Building For The Future
- 20 Along Hydro Lines

THE COVER

With elections approaching, the youngsters on this month's cover look for all the world like experienced campaigners. But their aspirations are not of the political variety. They are vying for honors in the Ontario Public Speaking Contest and, judging by their expressions, they are right at home before a audience. Just how much this kind of training can mean to a young person is examined elsewhere on these pages.

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A QUESTION OF AESTHETICS

It would be difficult to assemble a group better qualified to discuss the aesthetics of electrical distribution in all of its ramifications than the one that sat down recently in Ottawa's picturesque Chateau Laurier Hotel.

They came at the invitation of the Canadian Electrical Association, and they represented provincial and national organizations in the field of electrical utilities, architecture, town planning, telephone utilities, real estate, municipal government, and home building. Their purpose was to explore every facet of utility distribution systems as they relate to community appearance, and to suggest practical procedures for improvement.

And they came prepared to sing for their supper in that each group was armed with comprehensive briefs indicating that considerable homework had preceded the meeting.

Unanimous in the opinion that underground was to be preferred to overhead construction from the testhetic point of view, the group also acknowledged that economics

would dictate compromise. They agreed that the goal should be underground construction, but where this was impractical, every effort should be made to improve the appearance of overhead systems.

But the outstanding feature of the symposium was the attitude of its members. There was no evidence of a stiff-necked, uncompromising approach on the part of any one group; no attempt at passing the buck; nor was there any time wasted in blaming the other fellow. Instead, each group seemed willing to accept a share of the responsibility and anxious to develop a common approach acceptable to all.

No group has been more vociferous in its advocacy of underground distribution than the Royal Architectural Institute of Canada. Yet its representative at the Ottawa symposium, James Strutt, indicated a full appreciation of the problems involved by acknowledging that the conversion to underground will be "inevitably slow".

He said: "I believe all of us are sensible to the fact that underground distribution is to a substantial extent more costly than overhead distribution. It seems to me that our chief function is to find methods by which the cost ratio between overhead and underground is narrowed or reduced to the point where the considerable advantages in favor of underground outweigh the advantages favoring proliferation of the overhead systems."

It is not unreasonable to suggest that the Association of Municipal Electrical Utilities of Ontario has helped considerably in bringing the problem of overhead versus underground distribution into proper perspective.

In February, 1960, the Association forwarded a comprehensive brief outlining the utilities' position, with regard to distribution, to the Architectural Institute. And it has maintained an active, special committee on underground construction for many years.

At the Ottawa symposium, a sixman A.M.E.U. delegation presented a most comprehensive assessment of the distribution situation, indicating that they were as much concerned with aesthetic values as the next man, but that their decision must always reflect the will and the welfare of their customers. The utility group also revealed that, without fanfare or trumpets, a great deal more progress had been made in underground distribution than was generally realized.

If the utilities have been able to impart an appreciation of the problems associated with electrical distribution to groups such as attended the Ottawa symposium, then much has been accomplished. Steady and continuing progress on the municipal front will do the rest.

But the public is something else again. Having been awakened to the aesthetic advantages of underground wiring, the layman is beginning to clamor for something he knows little about. Additional costs, financing, rates and operating disadvantages are things he has not considered.

A tremendous job of public relations is involved here because a program of this magnitude cannot be successfully undertaken without the understanding and support of the people. They must be made familiar with all aspects of the situation and left to determine the rate of progress by their willingness to pay.

And while the onus is on the utilities to design and install the improved distribution systems of the future, the task of public education must be shared by every organization which has a stake in the Canadian community and a real desire to improve the municipal environment.

THE EXPORT TRADE IN HYDRO KNOW-HOW

by Max Lambert

Over the years Ontario Hydro has built up a storehouse of knowledge and skills that is drawn on by countries around the world



I_N late September, 1960, Ontario Hydro employee John L. Witbeck was nosing around a maintenance depot for 280 buses in Lahore, West Pakistan.

"I had a few spare days before coming home," John recalls, "and I thought I might be able to do something useful. I could see that the bus tires were underinflated and badly treated. Thinking I could set things right I asked for a tire gauge."

He was assured there was a tire gauge but no one could find it. Next day it was still missing, so John demonstrated an alternative method of checking inflation.

He went around the depot whacking tires with an iron bar, explaining to the Pakistanis that the bar would bounce if the tires were properly inflated.

"Sure this is pretty primitive," admits John, "but it works, and perhaps the Pakistanis in that depot are looking after the tires now. If so I made some sort of contribution to improved maintenance."

John Witbeck spent six months in West Pakistan in 1960 under the Colombo Plan. He had what underdeveloped countries need: specialized skill and know-how. In his case it was the ability to maintain and run a fleet of vehicles and operate central service and repair shops. Before he left Canada he was service manager at the A. W. Manby Service Centre.

In Pakistan, John worked with the West Pakistan Road Transport Board, a large organization with 1,400 buses—more than the combined fleets of the Toronto Transportation Commission and the Grey Coach Lines.

The Transport Board wanted a Canadian transport expert to probe and report on the possibility of setting up a central repair shop in Lahore to rebuild and repair buses, engines and spare parts. And while in Pakistan, John rode dozens of buses in, and between, six major cities where the board operations are centered.

He studied the board's problems at first hand, visited all maintenance stations, sub-depots, repair shops, probed stores procedures, requisition systems, material planning, and shop organization.

John willingly accepted the Pakistani assignment when the appeal for assistance filtered down to Ontario Hydro through government channels. He feels that Ontario Hydro, in granting him six months leave of absence, was assisting Canada in the vital field of foreign aid.

Numerous countries today need help in many spheres, and Canada, within its limited resources, is doing its share. It must depend, of course, upon individuals and organizations with the necessary skills, who are willing to shoulder the responsibilities of good citizenship.

As one of the world's leading electrical supply utilities, Ontario Hydro has an obligation in this regard which it is meeting without reluctance. Dur-



This is an artist's conception of the great Dez hydro-electric project in Southwest Iran. Plans are underway to send a sixman Ontario Hydro team to initiate operations, scheduled for early next year, and to train Iranians to run the plant.

ing more than 50 years of developing and administering the electrical power resources of Ontario, the Commission has built up a great store of skills and knowledge which is being called upon from all corners of the world.

John Witbeck is just one example.

At the moment several Ontario Hydro men are overseas. Frank J. Dobson, one of the Commission's top engineers, has the prestigous and responsible job of directing the big, costly Volta River power project in Ghana. Mr. Dobson was named chief executive of the Volta River Power Authority last fall by Ghana's president, Kwame Nkrumah. He'll be away on leave of absence for about five years.

As well as directing construction, Mr. Dobson will be responsible for finances, for an extensive rehabilitation program affecting some 65,000 persons, and numerous other details associated with a project of this scope.

Commenting on Mr. Dobson's appointment, Ontario Hydro Chairman W. Ross Strike said: "We believe that development projects of this nature deserve the fullest support by Canadians. We are pleased that Mr. Dobson, in common with other

Hydro employees who have made similar contributions in the past, has seen fit to accept this responsibility."

And personable young Emile Carriere, a Central Region personnel officer, recently flew to Lebanon for a two-year stint with the United Nations Works and Relief Agency on the Arab refugees problem.

At the moment, too, plans are being completed to send a six-man Ontario Hydro team to the torrid Khuzestan region of Southwest Iran to run a \$54,000,000 hydro-electric project. The team will be on hand to initiate operations and stand by for commissioning of the 520,000-kilowatt Dez project early next year.

Donald David Haig, P. Eng., plant superintendent of Ontario Hydro's Nipigon River generating stations, will lead the team. As he sees it, "The most important function of our job will be to train the Iranian staff to operate the plant. Know-how is the biggest thing we have to offer."

The team will remain employees of Ontario Hydro during its two to three-year stint abroad. Salaries and expenses will be paid by the Development and Research Corp. of New York, who are co-ordinating the Dez project.

But the Commission's major effort in terms of human assistance in the past few years remains its role in the development of the Warsak power and irrigation project on the Northwest Frontier in West Pakistan.

This was a massive Canadian aid scheme, and Ontario Hydro people played an important part in its successful completion. Built under the Colombo Plan, Canada poured \$36 million into this 160,000 kilowatt project.

At peak construction there were 147 Canadian specialists on the job. Many of these were former employees of the Construction Division. Warsak construction manager, Cory J. Robbins, for example, was a former Ontario Hydro man.

Apart from these ex-employees, the Commission sent several of its experts to Warsak during the construction period. And now, with the station in operation, R. G. Freeman of the Meter and Relay Department, Georgian Bay Region, is keeping the Hydro flag flying at Warsak.

Two others have returned to Canada from Warsak in the last year or so. Ken Gemmel, newly appointed manager of Renfrew Hydro, spent a year as plant superintendent at Warsak, and A. E. Lock, from the Robert H. Saunders - St. Lawrence Generating Station, also did a year's duty there as an operator.

Over the years, Ontario Hydro has developed a national and international outlook—an outlook which is reflected in the export trade in hydro-electric know-how. In this modest but effective way, the Commission is contributing to co-operation, goodwill and understanding, at home and abroad.

SOME GO OUT - BUT OTHERS COME IN

ONTARIO Hydro's activities in the field of aid to developing countries are not limited to overseas posting of skilled personnel.

Under the Colombo Plan and United Nations Fellowship scheme the Commission has, in the past two years alone, been host to nearly 30 trainees who've studied in a wide field, including design, operations, personnel, accounting and construction.

Some of these men have been with Ontario Hydro only a few days, others have trained for up to six or seven months.

Commenting on the training program, Ontario Hydro's general manager, J. M. Hambley, said: "I'm sure these men take back to their homelands a heightened appreciation of our democratic system and the Canadian way of life as well as the technical knowledge they've acquired."

Last year technical and administrative training was given 16 men—seven from India, four from Pakistan, two from Thailand, one each from Ceylon, Japan, Lebanon.

In 1962, 12 more will come to Ontario Hydro for training. Again, the bulk will be from India and Pakistan, but there'll be a couple from the Philippines.



Fairly typical of the Colombo Planners is Tamanna Khan, who comes from Chittagong, East Pakistan. He arrived in Canada late last year, and returns to his home land this summer.

Khan graduated in electrical engineering from the University of Dacca in 1954. He worked for the East Pakistan Water and Power Authority, which is now set up on similar lines to Ontario Hydro. But the Pakistan body is concerned with irrigation and flood control in addition to electrical power.

Interested particularly in lines and sub-stations, Khan joined Ontario Hydro in January after a twomonth stretch in Toronto with the Canadian division of English Electric, where he did testing and maintenance work on various equipment items.

Khan worked first with line maintenance crews in the Western Region, followed by a spell with the distribution office on Bathurst Street, Toronto. He then switched to the Transmission Department in Head Office—"to see how engineering problems in this field are attacked and solved within Hydro." The last weeks of Khan's stay with Hydro are to be with line construction and sub-station maintenance experts.

"In Pakistan," Khan says, "we have to strike a balance between Hydro's highly mechanized operations and our own methods with cheap, plentiful labor." Grateful for the chance to study with Ontario Hydro, Khan says his visit here has been "extremely worth while."



Tamanna Khan, East Pakistan.





On eve of departure for Ghana, Frank Dobson, left, and sons, get expert advice on lacrosse from sports columnist Ted Reeve. Object is to interest Ghana youngsters in a truely Canadian game.

Striking a balance between manual labor and mechanization is one problem of hydro-electric construction in under-developed countries. Native laborers are shown landing with electrical equipment needed at Warsak development in West Pakistan.

CULINARY FLASH-BACK

Stamford ladies re-enact the world's First "Electric Banquet"

Electric oven of 1892 cooked the first "electric" banquet," including a sirloin of beef like the one which the owner of the Windsor House (left) is taking from Thomas Ahearn, inventor of the oven.

Canadians made culinary history on August 29, 1892, when they served the world's first electrically cooked meal.

The "electric banquet", as the event was called in a subsequent issue of the Ottawa Journal, was held in Windsor House, Ottawa, and was attended by Mayor Durocher, J. W. McRae, president of the electric railway, W. Y. Soper, of the Chaudiere Electric Light Company, G. P. Brophy, and a number of newspapermen.

In the words of the Ottawa Journal:

"The interesting and peculiar fact about the edibles was they were all, from the roast turkey down to the berry pie, cooked by electricity, the first instance on record of a complete repast comprising a number of courses being cooked by the agency of chained lightning. The whole bill of fare for the banquet had been gotten up in the oven at the electric car shed, during the day, and brought to the hotel in a special car. The tea and coffee were boiled





in one of Mr. Ahearn's new heaters. Everything was cooked to perfection.

"After the light after-refreshments were disposed of and sundry small jokes cracked and puns attempted at the expense of the electric commodity, all in good part, of course, Mr. McRae and Mr. Soper led the way to an electric car at the door and took the party up to the car shed to see the oven where the things had been cooked, and to explain the system."

The remainder of the newspaper account describes the visit of the banquet guests to the electric car shed, and the explanations made by the inventor of the electric oven, Thomas Ahearn.

As the newspaper described it:

"There is no water about this system, as in the home heating. It is just the dry heat, the maximum warmth produced by the two heaters is literally sufficient to roast an ox."

In the fall of 1961, this historic event attracted the attention of the Stamford Chapter, Imperial Order Daughters of the Empire. They wrote to Dr. Charlotte Whitton, present mayor of Ottawa, asking for details, and received in reply photostat copies of the account of the banquet as it appeared on Aug. 30, 1892, in the Ottawa Journal.

Stamford Chapter, I.O.D.E., thinking the event had possibilities as the highlight of a cooking demonstration open to the public, contacted Ontario Hydro's Viagara regional office for advice and assistance in preparing a pantomime and writing a narrative. The I.O.D.E. felt that although Ottawa could claim the nonor of serving the first electrically cooked meal in the world, it would be fitting to re-enact the occasion

Arriving in appropriate style at "Cooking Customs Over the Century," Mrs. W. R. Morrison, president, Ontario Chapter, I.O.D.E., poses with two costumed members of the Chapter who, for the day, were Mayor and Mrs. Durocher. Electronic range which Lois Hurst, Ontario Hydro home economist, is demonstrating below, will cook that hotdog in seconds.

in Niagara Falls, the cradle of electric power in Ontario.

Months later, the idea became a reality in "Cooking Customs Over the Century" presented by Stamford Chapter, I.O.D.E., in the Park Hotel, Niagara Falls, Ontario. The ladies enjoyed the full co-operation of the Niagara Falls and Stamford Township Hydro Systems.

In authentic costumes of the period, 14 I.O.D.E. members re-enacted the visit of the "electric banquet" guests to the electric car shed, where Mr. Ahearn had cooked the history-making meal.

The electric oven itself, "of brick, about 6 feet wide and somewhat deeper and about 6 feet high," dominated the stage. Built in an Ontario Hydro workshop, the oven was an exact replica of the original, which had two Ahearn heaters, each 50 volts, in the lower part of the oven. To avoid loss of heat by opening and shutting the oven door, there were peepholes, protected by heavy plate glass, at the sides of the doors.

The remainder of the presentation, "Cooking Customs Oven of the Century," was in strong contrast to the pantomime depicting the first electrically cooked meal.

Present-day methods of cooking electrically were demonstrated by Lois Hurst, Ontario Hydro's home economist. Miss Hurst also provided the audience with a peep into the future by demonstrating the electronic range, which can cook entire meals in a matter of seconds.

The Ahearn oven and the electronic range span 70 years of electrical progress in the culinary arts.

PUBLIC SPEAKING

LIKE the blind men who thought they knew what an elephant looked like after feeling its ear or its trunk or its side, we tended to judge the Ontario Public Speaking Contest from a single perspective.

The value of the contest as a means of introducing hundreds of thousands of young people to the public utilities, where they will be paying the bills not so far in the future, is obvious and can scarcely be over-estimated. But what does the contest mean to the young person himself? Will it help him along the path to success in the years ahead? Or is it just another diversion taking up the student's time when he should be applying himself to more vital aspects of learning?

To find the answers, this writer refused to be mesmerized by the words and gestures of the talented young orators at this year's finals, held recently in Toronto, and seized every opportunity to speak with teachers, parents, school trustees and students.

Piece by piece the picture emerged, and as the image grew stronger its message was reassuring. Here, indeed, was a unique opportunity to invest in the future of the province as represented by its youth, while helping them to understand and appreciate the organization which will supply their everincreasing electrical requirements as they become adults and parents.

The road to maturity is strewn with fears and uncertainties, and speaking in public is one way to build all-important poise and confidence. And where else can students learn so much about researching

information, expressing their ideas and opinions, and thinking on their feet?

"They certainly can't in the classroom alone. Even auditorium sessions aren't sufficient," says Mrs. J. F. Holland, Public School Trustee from Kenora. "They really need an opportunity to address an audience made up of people other than their own class-mates."

Besides learning the positive techniques of speaking, the students become aware of their individual faults. As one young contestant shyly confided, "I waved my hands around so much up there, the judges must have thought I was swatting flies. Golly, I'll never do that again. Next time I'll put more expression into my voice instead of my hands."

To encourage their charges to take part in the preliminary contests that must be won before they can reach the finals, teachers use various techniques. Some, like Mrs. A. J. Askew of Leamington, make it compulsory for their entire class to participate because they place a high value on the experience of participation.

"One of the best speakers in the town of Leamington made his first speech in my Grade VIII classroom," Mrs. Askew proudly relates. "I certainly wouldn't want to deprive any child of equal opportunity. Sometimes a little push in the right direction is all a youngster needs, and who is in a better position to give it to him than the teacher?"

Other teachers simply point out the advantages of taking part, including the prizes that can be won,

AN INVESTMENT IN YOUTH

by Olga Ferda



"What this country needs" . . . these district finalists might be saying . . . "are people who can forget about themselves and concentrate on the audience."



and leave the decision up to the youngster. But almost without exception, they offer suggestions on where to find reference material, and how to compose a speech. Then, upon hearing the finished product, they offer constructive criticism, pointing out where the speech can be improved.

"To give my hopefuls extra experience, I make arrangements for them to address other classes in the school," said Miss Myrtle Wilfong of Elmira's John Mahood Public School.

Occasionally classmates will give their opinions, but more usually they simply offer encouragement and build up the speaker's self-confidence.

"Gee, my friends even liked my speech when it was awful—before I changed the parts my teacher didn't like," admitted a young hopeful. "But without my friends, I don't think I would have had the nerve to come this far."

Unfortunately, not all schools in Ontario participate because of lack of sponsorship at the preliminary school level or for other reasons. Many municipal utilities have stepped into the breach, and those that are lending their support and encouragement are finding that the rewards far outweigh the limited contribution they are required to make of time and money.

Certainly, the youngsters who participate today will be the teachers, clergy and politicians of tomorrow. And Ontario will be the richer for people who can express themselves coherently and eloquently.

As Father William O'Flaherty of St. Mary's Redemptorist College, Brockville, explained, "Many of our boys will one day be priests and, as such, they will have to feel at home in front of the congregation if the congregation is to benefit. This contest is a wonderful way to train for the future."

Another opinion was offered by C. H. James of Toronto, a parent of one of the contestants. "If an otherwise well-qualified person can't express himself, his knowledge is lost to others, and Canada is the loser."

And how does it feel to win? "Well, I didn't expect to come out on top," admitted Frank Pollard, elementary winner, "and I still can't believe that I did, but it is very exciting!"

Fresh from one victory, who can say what heights this youngster will go on to conquer?

PUBLIC SPEAKING



Good-will is the chief reward for utilities participating in the Ontario Public Speaking Contest. Here, James Ross, Whitby commissioner, presents electric clocks to a group of local winners. Ontario Municipal Electric Association awards clocks to district finalists across the province.

AS THE UTILITIES SEE IT

Why does your utility support the Ontario Public Speaking Contest," we asked D. B. Michie, Secretary-Treasurer of the Mimico Public Utilities Commission.

"Because we benefit ourselves while helping members of our own community," he explained.

In reply to the same question, B. D. Fleming, Manager of Toronto Township Hydro-Electric Commission, said, "It is the best way of introducing the local utility to a quarter of Ontario's residents, who are students today, but will become hydro customers in the future."

Biggest boon to the utilities is the goodwill that results.

"We are able to reach the very heart of the family through the children. They talk at home about what their utility is doing, and tell their friends too. Obviously we could never afford to pay for a campaign that would produce results of equal type and quality," added Mr. Michie.

These Lakeshore municipalities on the outskirts of Toronto are good examples of communities which have recognized the benefits of participation in the contest at the grass roots level. While making it possible for their students to gain valuable experience which will be extremely useful throughout adult life, these utilities are creating a good public image of themselves as willing members of their communities.

Naturally, contest events are news, and receive extensive coverage on radio, television, and in the press. A recent survey of Ontario newspapers showed that almost 2,000 lines were devoted to the contest in one week alone.

A by-product of the contest is the knowledge that students gain about the Hydro family in Ontario, of which their own utility is an integral part. Since many contestants speak on electrical topics, their fellow students also learn about Hydro.

In addition to supporting the local finals, both Mimico and Toronto Township Hydro treat the winners to a trip. The trips usually include visits to Hydro developments in the Niagara Falls or St. Lawrence districts.

"This is just another way of showing our interest in our future customers," explains Mr. Michie.

Any suggestion that the fairer sex enjoys the edge where the spoken word is concerned was disproved by the results of this year's Ontario Public Speaking Contest. Only three girls managed to place among the nine top speakers.

The contest finals were co-sponsored by the Ontario School Trustees' and Ratepayers' Association and Ontario Hydro. They were held in conjunction with the Ontario Educational Association's 102nd annual convention in Toronto during Easter vacation.

Forty-five finalists from across the province competed for first, second and third prizes in three divisions. The finalists were chosen from more than 200,000 students, in elementary and secondary schools throughout Ontario, who

THE CHAMPIONS

had competed at the local level.

In the elementary section, first prize winner, Frank Pollard, 13, Grade VIII student at Oak Park Public School, London, received \$75, a large cup for his school and a small one for himself.

In the secondary school prepared section, David Golem, 18, Grade XIII student at Chesley District High School, placed first. He won \$100 and a cup.

William Dymond, 19, Grade XIII student at Winston Churchill Collegiate, Scarborough, won first prize of \$50 and a shield in the secondary school impromptu section.

All finalists received a scroll of merit and a day-long trip to Niagara Falls as guests of Ontario Hydro.



Boys scored a clean sweep in impromptu section for secondary schools. Ontario Hydro Chairman W. Ross Strike presents the shields. From the left are:
Mr. Strike; William Dymond, Scarborough, first;
Henry Faust, Harrow, second; Fred Gorbet, Welland, third.



Elementary school champions enjoy guided tour of Niagara development as guests of Ontario Hydro. From the left are: Ena Bruce, Toronto, second; Frank Pollard, London, first; Elaine Clarke, Winchester, third.



Secondary school winners in prepared speach section talk it over with W. Ross Strike. From the left are: Mr. Strike; David Golem, Chesley, first; Murray Taylor, Rockwood, second; Julia Maniates, Toronto, third.



Ending a long day with a bang are these youngsters at the Canadian National Exhibition. Hand's fireworks have provided the grandstand finale for many years, and they are equally familiar at major events across Canada. W HEN Dad set off the kids' fireworks in the empty lot next door on Victoria Day weekend, it's a good bet that a firm just west of Toronto contributed to the display.

For the T. W. Hand Fireworks Company, Cooksville, Ontario, a family concern for 90 years, has prospered to become the only large-scale fireworks manufacturer in Canada.

The internationally famous firm began production way back in 1873. Even at that date the Canadians were Johnny-come-latelies, for the history of fireworks can be traced to the Ancient Greeks. They had a well-guarded formula for a deadly moulten fire with which they anointed their enemies as far back as the year one.

Then the Chinese discovered gunpowder in the 9th century. Fire-crackers soon followed, and these



Hugh Hand heads the firm established by his grandfather 90 years ago. He is shown in one of the warehouses at the company's Streetsville plant.

THE HAND BEHIND THE FIREWORKS

continue to play a leading role in Oriental celebrations.

Europe contributed color in the 17th century, and displays of any pyrotechnic merit date from that time.

Pyrotechnics (a fancy word for the art of fireworks) became a tradition in many lands, and was brought to the new world by immigrants. The English have always been particularly fond of fireworks, and their enthusiasm reached a never-to-be-forgotten peak at the celebration marking Queen Victoria's Diamond Jubilee.

One display, sent to Blantyre, Nyasaland, was carried 300 miles from the mouth of the Zambezi River by canoe and on the heads of porters through swamp, along jungle paths and rivers. It was fired on the appointed day, complete with a portrait of

the Queen before a huge crowd of awe-striken natives.

Professor William Hand, noted English pyrotechnic expert, burst upon the Canadian scene in a big way. On a warm May night in 1874 he gave his newly-founded business a big boost with a tremendous display for the wondering inhabitants of St. Catharines, Ontario.

This, reputedly the first fireworks show in Canada, made the professor an overnight celebrity. He decided his fledgling business would make out . . . and it did.

Grandfather Hand started out with a shed and five employees. Today, grandson Hugh Hand runs a firm with a 250-person payroll. The company has a 100-acre factory complex at Papineauville, Quebec and a similar-sized test, development and research centre at Cooksville.

The Hand firm divides its fire-working activities into three major spheres. It makes millions of sold-over-the-counter fireworks that go into the stores for brief periods before the nation's fireworks festivals. In British Columbia Guy Fawkes Day is the big occasion, east of Moncton it's Halloween. In between, Queen Victoria's Birthday, May 24, is the favorite date with St. Jean Baptiste Day—June 24—also popular in Quebec.

Store-sold Hand fireworks range from 5c novelties to assorted \$25 boxes. One of the most popular—with children naturaly—is the 35c burning schoolhouse. A new line for 1962 is a \$2 miniature Niagara Falls. It's a replica of a big, crowd-pleasing display piece that has brought the wonders of the great cataract to audiences across the country.

A distinction should be made here between fireworks and firecrackers. The latter produce nothing but noise, and they are all imported. Because of the frayed nerves the big cannon crackers have created in the past, this year their size has been strictly limited by federal legislation. And the familiar sky rockets



of years gone by met a similar fate earlier because of their uncontrolled flight.

The second phase of the company's business is the sale of countless set displays ranging in price from \$35 to \$1,000.

Bought by service clubs and like groups, the displays are especially designed for easy firing by local committees. No expert assistance is required. All items are labelled with firing instructions.

The company, which does a thriving trade in these lines, claims to have "probably the most widely diversified and spectacular line of display fireworks in the world."

The other major interest of the Hand firm is the huge and costly—often running into thousands of dollars—displays it designs, sets up and fires for occasions like the Canadian National Exhibition, the Calgary Stampede, Dartmouth Natal Day and others.

Hand has fired the massive, nightly displays at the CNE for many years. And it's won contracts for the A and B rodeo-festival circuits on the prairies for the last five years against 10 or 15 competing English and American firms.

These big displays are handled by 10 to 20 expert Hand pyrotechnists. Shows like the CNE fireworks depend on split second timing.

"These affairs are handled like stage shows," says Hand's general sales-manager, Samuel J. McPhee. "It's a major crime to be a second late, even with the tiniest segment of the firing arrangements."

Hugh Hand creates the themes for most of the big shows, and has artists draw detailed, colored layouts of the projected display. Mr. Hand's imagination and ingenuity appears unlimited. Calgary Stampede shows have featured Indians attacking a prairie fort and wild west saloons—all outlined in fireworks and with the movement provided by the firing arrangements. Each year there is a new theme. The displays are built at Cooksville and test-fired to make certain all is A-Okay.

The largest display contract the firm ever handled was for a \$30,000 extravaganza associated with a religious festival in Ottawa. It was one of the greatest fireworks displays ever seen in the western hemisphere.

Besides its commercial and display fireworks, Hand turns out many products for ships chandlers and the like. And during the last war the firm converted quickly to manufacture of Very lights, smoke bombs, signal cartridges, sea markers and parachute flares.

Whatever the occasion, and wherever the celebration takes place in Canada, the hand behind the fireworks is likely to be Hand's.

This poster drew big crowds to Professor Hand's pyrotechnic display at St. Catharines in 1874. Other program features included dancing on the green, ascent of monster balloon and race between an elephant and a pig.



Bob lit up some of his more interesting old bulbs for this picture. Included is the "Reliance Crucifix Lamp," a candle-shaped bulb with a cross-shaped filament.

LIGHT TREASURE

... is what the diver sought when he boarded the mouldering hulk of the S.S. Minko

ONLY a trail of bubbles marked the progress of skin diver Mel Inch as he probed the bottom of Lake Muskoka, but when they ceased to advance, tense watchers in the boat above sensed success. And when the diver finally broke surface, their hopes were confirmed. Clenched in one hand was one old light bulb.

Recovered from the pitch black purser's cabin of the S.S. Minko, sunk in 45 feet of water 32 years earlier, the bulb represented another important addition to the antique electric bulb collection of Ontario Hydro's R. G. (Bob) McClevis, of the Orillia Rural Operating Area. Pitted from long exposure, this one still worked and so qualified for a place in the growing ranks of Bob's vintage bulbs.

Only a recent victim of the collector's virus, Bob has already accumulated some fascinating items. One is an eye-catching "Re-

liance Crucifix Lamp," a candle-shaped bulb of ruby glass, that was made in Japan. Its cross-shaped filament glows chastely with white light.

But he considers a crystal-clear bulb of hand-blown glass with a hardy tungsten filament his greatest trophy. Its discovery launched his hobby.

"It's the last working bulb from the first hydro-electric generating station built by Ontario Hydro," Bob says. He found it on the panel board of Wasdell Falls G.S., on the Severn River. The station was placed in service in October, 1914.

One night, on a trouble call, Bob spotted a hexagon-shaped beauty, and while the owner wouldn't accept money for his 35-year-old porch light, he agreed to exchange it for two modern 60-watt bulbs.

Another "find" was a German heat lamp with a heavy tungsten filament shaped like a funnel. Bob obtained it from a man whose mother brought it from Germany. It's of unknown vintage and provides more light than heat.

Other lamps in his collection include a 42-year-old darkroom lamp, dipped by hand in wine lacquer; an outside frosted bulb of the '20s; and a pair of carbon filament hall lights with clusters of cherries painted on the glass with lacquer.

Like a true historian, Bob deplores the fact that so many items depicting our electrical past are being consigned to the scrapheap. "There are many artifacts linked with Hydro's history that could be picked up for a song and, effectively displayed, tell the epic story of Hydro's development, perhaps for thousands of tourists," he says.

He suggests that Wasdell Falls G.S., shut down several years ago but still kept spic and span, would be a logical place to create a Hydro museum.



"There is no magic formula which can apply to all cases, and it is only through co-operation and with the earnest efforts of all concerned that progress can be accomplished in this field."

> H. F. Beique, President Canadian Electrical Association

On the theory that a problem well defined is always easier to resolve, representatives from major groups concerned with the beautification of urban centres recently attended a day-long symposium in Ottawa entitled the "Aesthetics of Electric Distribution."

Organized by the Canadian Electrical Association, the meeting was attended by representatives of supply and distribution utilities, architects, town planners, telephone companies, home-builders, real estate and municipal government.

As could be expected where the problem of unsightly poles and wires was in question, underground distribution was the main topic of discussion, with the various organizations presenting prepared briefs during the morning session and the afternoon devoted to a round-table forum.

Speaking at luncheon, C.E.A. President Henri Beique emphasized that the heart of the problem was a matter of cost. He pointed out that the capital investment required to service the four million Canadian domestic electric customers had been estimated at nine times the annual revenue derived from them. He said this was much in excess of investment made per dollar of revenue in manufacturing and retailing, and that this was perhaps the most important problem in the distribution of central station electricity.

"As about half of the total investment per kilowatt delivered at the service entrance is actually made in the electrical distribution plant," Mr. Beique said, "any major increase in the cost of distribution is obviously of the greatest concern to public utilities, as it is bound to affect the sale price materially."

He urged each representative at the symposium to pass on whatever he might have learned to the full membership of his organization.

Together, the briefs presented by the various groups attending the symposium represent a substantial anthology of informed thinking on the subject. Only a few of the viewpoints expressed can be considered here. Statements prepared by a man A.M.E.U. committee dealt we the question of underground disbution (1) in relation to new selections and (2) as a replacement of the properties of the committee of t

Presenting the brief on origi systems in new subdivisions, J. Williamson, manager, Niaga Falls Hydro, emphasized that pressive progress in undergrou distribution had already be achieved by municipal Hydro tems in Ontario. He said: "C sidering the number of municip ities of a size where undergrou is presently attractive, it won seem that very considerable strihave been made, and I therefore say to you, assembled here to o sider this problem, that under circumstances should it be co sidered that the Ontario electri utility distribution industry dragging its feet in regard underground."

Mr. Williamson also drew attion to the close relationship who exists between power rates a capital investment. With regard financing he had this to say:

"... the architects, builders a sub-dividers have the answer of tirely within their control, as without necessarily putting forward any capital to the utility. This could be done by building houses whi are truly up-to-date and are no obsolete before they are built, as by completely equipping them will electric equipment to Gold Medical sub-divided to the sub-divided to th

symposium on distribution

ion Standards. You will find that he utilities, by economic requirenents, will most likely put the listribution system underground ecause this is the most economical way to serve such a sub-division."

Presenting the A.M.E.U. brief on he replacement of overhead plant with underground in urban areas, larry Hyde, manager and chief ngineer, Toronto Hydro, quoted he costs of some recent work arried out by his own utility. He aid that it cost from \$25 to \$100 er linear foot to go completely nderground on a main traffic rtery previously supplied from verhead lines on cedar poles.

He suggested that while underround was the most obvious way improve the appearance of disibution systems, compromise rould be considered. "Just as in the redevelopment of urban cenes, where it is not always necesry or advantageous to raze an attire area," he said, "so, too, in the case of the problem being disassed—it is possible to take existing conditions and make them here attractive."

Mr. Hyde enumerated the very psiderable improvements which the taking place in the design and instruction of overhead systems improve their appearance. He ged that where underground distruction was being considered, it undertaken as an integral part a redevelopment program rather tan on a piece-meal basis.

Speaking on behalf of the Town Planning Institute of Canada, G. Nordmann, Central Mortgage and Housing Corporation, suggested four approaches which should be considered in initiating an effective national program of underground distribution construction.

1. Research. He called for a joint program of research directed towards solving the problem of underground distribution in a manner suitable to varying climate and ground conditions, at the most economical cost. Such research, undertaken by electrical manufacturers and the distributors of electric power, would lead to some common standards of design.

2. Planning. Mr. Nordmann said that well-planned programs should be drawn up for underground distribution, at least in the downtown areas. He conceded that these would be of a long-term nature because of the costs involved.

3. Redevelopment. Noting that the central areas of many municipalities were becoming "worn out", the speaker felt that it should be possible to provide underground services wherever a redevelopment program is being planned.

4. Suburban Improvements. He could see little hope for the removal of overhead wires in recently developed suburbs, but urged more desirable forms of distribution than the placing of poles within the street allowance.

In conclusion, Mr. Nordmann said: "Members of the other professions, the building industry, and the public are beginning to appreciate the benefits which can accrue from underground distribution, but it is only the electrical engineers who have the special skills necessary to evolve improved methods which will make it economically possible to eventually rid ourselves of our overhead blight."

As the spokesman for the architectural profession, James Strutt, M.R.A.I.C., expressed the hope that the Ottawa meeting was only the beginning of a concentrated effort to improve the appearance of distribution systems. He said:

"I believe we all recognize that a one-day symposium in the nation's capital, although potentially very useful in its technique of cross-fertilization of ideas, will not provide all the answers. I hope that this meeting today will be only the beginning of a methodically prepared, well organized campaign to convince members of our own organizations, associations and institutes and, most of all, the general public that conversion of overhead wiring to underground distribution is worthy of study, if not of direct implementation."

Mr. Strutt told the meeting that a survey of municipalities of over 10,000 population, from coast to coast, had revealed the following:

Over-all, there is relatively little underground wiring in Canadian cities at the present time; the tremendous increase in power load is forcing municipalities to make a careful review of the advantage of underground wiring; winter storm damage is not an important factor in any argument between overhead and underground systems; and there is an awakening interest in studying long-term conversion programs.

"From the standpoint of the architectural profession," Mr. Strutt said, "it is clear that a trend has set in, both at the city centres and on the perimeter of communities, which will steadily gain momentum in the months ahead."

WOODSTOCK BUILDS FOR TOMORROW

Impressive ceremonies

mark opening of

handsome new P.U.C. headquarters



Repair and calibration of meters is studied by visitors during opening day tour of Woodstock's new PUC building. The clean, modern facilities are the pride of the electrical meter department.

For the third time in its 61-year history, the Woodstock Public Utility Commission has moved into new offices—offices which Commission Chairman C. W. Hayball affirms will serve the growing community for many years to come.

Situated in the heart of the city's business section, the new offices were officially opened by W. Ross Strike, Q.C., Chairman of Ontario Hydro, at a quiet but impressive ceremony attended by local civic officials and business men, as well as representatives of the O.M.E.A., and the A.M.E.U. and Ontario Hydro.

Mr. Strike stressed the progress which this and other new utility buildings throughout Ontario represented, and congratulated the local commission's foresight in financing the entire cost out of current revenue and savings.

"Woodstock, as one of the original municipalities to sign a contract with Ontario Hydro in 1908, has had a long and honorable association with the development of public power in Ontario," Mr. Strike said.

"It is an association which has been profitable to both the local and the provincial commissions and the people they represent."

A link with the early history of public power in Woodstock was provided by J. G. Archibald, manager of Woodstock P.U.C. from 1901 to 1941, who unveiled a plaque commemorating the opening of the new building.

Mr. Archibald, 94 years old, recalled the vast improvements which the new building offered over the previous headquarters, first the City Hall and then the commission-owned offices on Dundas St. which had just been vacated.

The new building is an electrically-heated twostorey structure of stone and marble with a complete basement. The main floor area consists of general administrative offices and board room as well as the offices of the executive; the second floor accommodates the meter calibration and repair department, a display area for appliances, offices for the service representative, and general office area, which will be rented until needed by the utility. The basement level includes the water department's meter and repair shop, lunch room, small staff meeting room, and the central unit of the air conditioning unit.

A central air conditioner will heat, ventilate and cool all sections of the building. A modern garage and service centre were completed in 1952 on the same property.

In addition to Chairman Hayball, the present Woodstock Commission includes J. Carnworth, F. T. Julian, H. R. Henderson, and Mayor W. A. Downing. Mr. C. E. Kirkby is general manager.



Ribbon cutting ceremonies by Ontario Hydro an W. Ross Strike were observed by, from left: C. W. Hayball, Woodstock PUC chairman; F. T. Julian, Mayor W. A. Downing, and H. R. Henderson, commissioners.



Former manager J. G. Archibald, 94, unveiled this handsome memorial plaque in the foyer of Woodstock's new PUC building. P. R. Locke, center, O.M.E.A. president, and R. A. Harrison, A.M.E.U. president, were also on hand.



Modern and functional, new Woodstock PUC uding provides ample space for expansion of the commission's business. Astute management arranged its financing out of current funds without resort to debentures.

A PROUD HISTORY

Almost two decades before Ontario Hydro became a reality, the people of Woodstock were supplied with electric service by a municipally-owned system.

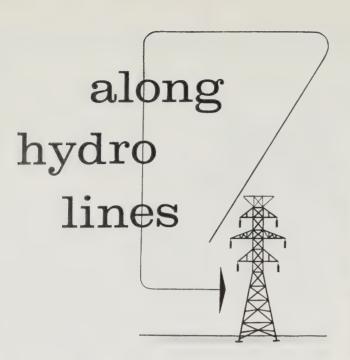
Although the plant was sold to private investors, the town repurchased it in 1901, and since that time has been supplied with public power. Long in the forefront of electrical development, Woodstock became one of the first municipalities to sign an agreement with Ontario Hydro in 1908, and took delivery of its first power in 1910.

Capacity of the original plant was 125 horse-power, used mainly for street and store lighting. In its first full year of operation as a Hydro municipality, Woodstock had a peak demand of 640 kilowatts. Fifty years later, in 1961, peak demand reached 19,085 kw, and customers had increased from 772 to almost 7,000.

To most long-time residents of Woodstock, J. G. Archibald represents Mr. Hydro. Still keen and able in spite of his 94 years, Mr. Archibald started his electrical career in Woodstock in 1891. Except for a few years in British Columbia, he served Woodstock throughout his working years, 40 of them—from 1901 to 1941—as manager of the utility.

Not content to let George do it, he was always active in the business of the A.M.E.U., climaxing this association in 1928 when he became president.

Displaying the keen business acumen of their ancestors, the people of Woodstock, through their Commission, have assured the success of their public utility by careful planning and systematic saving.



25 Years with Sudbury Hydro



Representing 75 years of service with Sudbury Hydro, this trio was recently admitted to the Sudbury Civic Employees' Quarter Century Club. From the left are: Phillip Rivers, line foreman; Charles Martindale, store-keeper, and Clark Hawkins, lineman. Mr. Martindale is a son of R. H. Martindale, who was

manager of Sudbury Hydro for nearly half a century, and whose name is a byword in Hydro circles throughout the province. Commission Chairman E. C. Dash presented the men with certificates and fifty-dollar bonds.

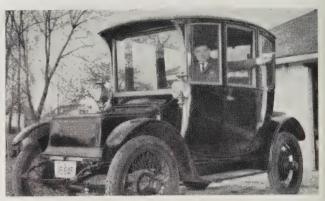
U.S. Apartment Project Generates Own Electricity

When completed in 1964, Rochdale Village, on the site of the old Jamaica racetrack in New York City, will be one of the world's largest co-operative housing projects. Each apartment in the 20, 14-storey buildings will be air-conditioned, requiring 12,000 tons of cooling capacity. Gas mains will supply better than 90 per cent of all energy, and no outside electric service will supply the project at any point.

Project engineers estimate the gas-fired electric plant will develop one kilowatt-hour of electricity for approximately 9,000 btu of gas on an average annual basis. The cost per kilowatt-hour is estimated at 1.243 cents compared to a price for purchased electricity of about 1.79 cents per kwh.

To add flexibility to the system, which is supplied with gas on an interruptible basis, two 3,750 kva gas-diesels will be used. These operate on 94 per cent natural gas and 6 per cent oil.

Driving Better Electrically



When we ran the article, "Electric Auto Revival", in the February issue of Hydro News, we never dreamed an Ontario Hydro employee had this elegant Rauch and Lang electric brougham stored away in his garage. Since then, Bob Lane of the Thermal Generation Department, has completed the car's complement of 16, 6-volt batteries and is ready to sally forth at the next rally held by the Antique and Classic Car Club, of which he is treasurer.

Licensed for the road, Bob's brougham sports steering tillers, front and back, twin sets of brakes, two accelerators and a three-foot-wide rear-view mirror. The 33-inch pneumatic tires take 90 pounds pressure, and to get the machine, seven feet, four inches high, into the garage, Bob had to remove several boards over the door.

Roads in the North Connect Hydro Projects

Construction of a 27-mile road to link Ontario Hydro's Little Long power development on the Mattagami River with the new Pinard transformer station near the Abitibi Canyon plant has been announced. H. J. McFarland Construction Co. Ltd., Picton, lowest of 13 bidders, has been awarded the \$80,000 contract.

Construction is already underway to connect Little Long with the site of the Harmon project, soon to commence, farther downstream.

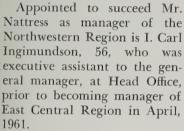
Although Little Long and other Mattagami River plants yet to be built will be remote-controlled from Pinard, the road will be needed so that operators and maintenance personnel can reach the plant quickly. The only way of getting to Little Long

from Pinard now is by air or a circuitous 200-mile rail trip.

The road from Little Long to Pinard is scheduled for completion by the late summer of 1963, by which time the transformer and remote control facilities at Pinard will be operating.

Ontario Hydro Regional Changes

A big man in a big job, David Irving Nattress, manager of Ontario Hydro's vast Northwestern Region for 14 years, steps down this month. Retiring after 38 years with the Commission, Mr. Nattress will remain in close touch with Hydro affairs in the Lakehead area through his appointment to the vacancy created on the Port Arthur Hydro Commission by the death of the late commissioner, John M. Allen.





D. I. Nattress



I. C. Ingimundson

In announcing Mr. Ingimundson's appointment, Ontario Hydro also revealed that A. M. Pedersen, manager of the Eastern Region would assume responsibility for the East Central Region in addition to his present duties as an initial step in the consolidation of the Commission's administration in Eastern Ontario. The move is part of Ontario Hydro's continuing effort to introduce operational economies.

As manager of the two regions, Mr. Pedersen will be responsible for an area 21,000 square miles in extent. Together, the two regions service 330,000 customers through 75 municipal electrical utilities and 23 rural operating areas.

U.S. Firm Investigates Electro-Hydronic Heating

In an effort to place electric space heating in a better competitive position, a New Jersey firm is investigating electro-hydronic heating. Basically, this system consists of an electric boiler and a 260-gallon storage tank which keeps the water hot for distribution through baseboard radiators as needed.

The equipment is the same as for a conventional system except for the immersion electric coil, the storage tanks and the control system, which consists either of time clocks in the home or a carrier wave sent out by the utility. Peak control is the objective, and operating costs would depend on the ability of the utility to grant attractive off-peak rates.

municipal briefs

Amherstburg, which claimed to be the first Ontario municipality to have an electrically-heated home, is anticipating another first in the field of electric heating. A new gymnasium, to be built at St. John the Baptist Separate School, will be the first in Canada to be heated and lighted by quartz lamp type infrared radiant heaters.

A Chapter of the Electric Service League of Ontario encompassing the southern part of the Niagara district has recently been organized. It will be known as the Welland, Port Colborne and Area Chapter.

Ontario Hydro representatives recently attended a regular meeting of the Espanola Hydro Commission in order to acquaint town councillors, who were also present, with the relationship between the provincial Commission and the municipal utilities.

London P.U.C.'s Electrical Department estimates its 1962 capital expenditures at \$1,937,000. In presenting the budget, General Manager V. A. McKillop noted that eight per cent of this year's revenue would be required to service debentures.

Midland Hydro is finding the electric heating load a promising new source of revenue. "There are eight electrically heated homes here now, and we have enquiries for two more," notes utility Manager Stewart Holt.

Niagara Falls Hydro has completed the changeover from flat rate to metered water heaters.

North York Hydro has arranged to purchase all 27.6 kv sub-transmission lines owned by Ontario Hydro and located within the boundaries of North York, with the exception of circuits that supply power to, or provide useful circuits with neighboring municipalities.

Sudbury Hydro envisages capital expenditures of almost \$1,000,000 during 1962 and early 1963. Of this, \$244,000 is slated for water heater rental units, \$140,000 for street lighting, and \$20,000 for underground distribution.

Peterborough Hydro plans to step up its distribution voltage from 2,300 volts to 4,160 volts in order to provide the necessary capacity for a proposed land annexation. Utility Manager Howard Powell notes

that Peterborough is one of the few cities in Ontario where the lower distribution voltage is still in use.

An Ottawa Householder recently expressed surprise when Hydro changed a fuse without charge in answer to a service call. Ottawa Hydro Manager Fred York explained that this had been the practice for more than 30 years. "There's no charge for such service, on all but main house fuses," Mr. York said. "We like to keep our customers operative, and not only replace the blown fuse, but try to trace the cause . . . without, of course, infringing upon the legitimate operations of electrical contractors."

Brockville P.U.C. estimates 1962 capital expenditures at \$190,300. Debentures in the amount of \$100,000 will be issued for this purpose.

Port Arthur P.U.C. is among the latest utilities to introduce a time-payment plan for electrical wiring. Fort William also has such a plan.

As a result of the excellent response to the electric water heater rental program, Stratford P.U.C. has been able to reduce rental rates. Since the inception of the rental plan, over 500 customers have installed rental water heaters.

Christmas may be a long way off but Belleville Council believes in planning ahead. Its members recently voted to provide plug-in facilities for connecting decorative lights in all new light standards installed in the downtown area. Quipped Alderman Don Whalen, "If the outlets were a little lower they would come in handy for shaving."

North York Hydro has commenced a program to equip its vehicles with safety belts.

Personalities in the news include Carl L. Johnson, formerly manager of Port Dalhousie P.U.C. and recently with St. Catharines P.U.C., who has been appointed manager of Orangeville Hydro. Among the vice-presidents elected to the Electric Club of Toronto are Harry Hyde, Toronto Hydro, and O. S. Russell, Ontario Hydro. Dave Thomas, popular line superintendent, Port Colborne Hydro, was recently honored on attaining 25 years' service. James Fraser, who retired after 40 years' service with the Stratford P.U.C. only last December, died recently.

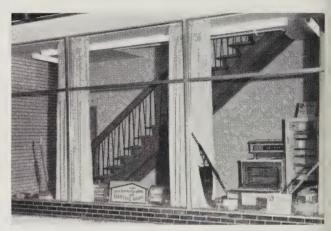
Historic Shoreline Changes As Carillon Nears Completion

Topographical changes reminiscent of those brought about by the St. Lawrence Power Project are taking place on the Ottawa River as Quebec Hydro's Carillon project approaches completion. Preliminary variations of the river level in the vicinity of the project have already erased the historic Long Sault of the Ottawa, and when the final stage of flooding is

carried out late this summer, the river level will be affected in the 60-mile section between Hawkesbury and Ottawa.

Preparation of the area to be flooded, estimated at about 10,000 acres on both sides of the river, has included the construction of a single canal lock to replace seven formerly required for navigation between Point Anne and Ottawa. The Quebec Government is believed to be planning an historical park at Carillon, and there is speculation that a parkway will be built along the Ontario shore between Pointe Fortune and Hawkesbury.

Dundas P.U.C. Provides Sales Aid



Sales promotion gets a valuable assist from attractive display quarters at the new Dundas P.U.C. offices. Appliance dealers from the town are encouraged to display their electrical appliances and equipment on a monthly rotating basis behind a broad sweep of glass in the building's street-level foyer. Adding interest to the display is a museum of electrical antiques on loan from townspeople. Plans also include a second floor display room, which will be used for demonstrations, cooking schools, and display of new appliances sponsored jointly by the commission and local distributors.

Paging Systems Without Wires

An Ontario company has recently installed a wireless paging system whereby supervisory and maintenance people can be instantly summoned no matter where they may be in the plant. Signals are sent out by the plant switch board operator, and the person paged then proceeds to the nearest telephone to obtain the message.

Individual receivers are designed to clip onto clothing and weigh about seven ounces. They emit signals which inform the wearer that he is being paged. A flashing light is obtained for high noise level locations. Range is up to three-quarters of a mile.

Electrical Safety Instruction

More than 100 Cubs, Scouts and Guides learned some of the fundamentals of electrical safety at a recent exhibition and demonstration sponsored jointly by the Safety Council and Hydro - Electric Commission of Port Hope.



John Elliot, Foreman, Port Hope Hydro,

demonstrated the hazards involved in flying kites near power lines; indicated the damage which can result from broken insulators, and showed the proper materials and techniques to use in fighting electrical fires. Electrical fuses, Hydro property signs and barriers, and the procedure to adopt in the case of fallen wires were other subjects discussed.

Cubs John Fulford and David Rose are shown in

the photograph with Mr. Elliot.

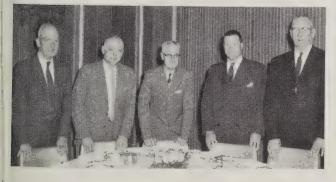
Canada to Produce Heavy Water?

Canadian companies soon will be able to use American techniques to produce heavy water for atomic reactors, according to a recent Canadian Press despatch. It said that arrangements are now being made with the United States Atomic Energy Commission for the release to Canadian companies of technical know-how in heavy water production.

Any Canadian company deciding to produce heavy water would be launching into a venture involving capital expenditures in the multi-million dollar range. Heavy water now used in Canadian-designed atomic power plants and nuclear reactors is purchased

from the United States at \$28 a pound.

Past Presidents' Dinner



In keeping with a pleasant tradition, Fred York, immediate past president of the Association of Municipal Electrical Utilities, was host at this year's past

presidents' dinner, held recently at the Royal York Hotel, Toronto. The group about to be seated includes, from the left: M. W. Rogers, Carleton Place; O.M.E.A. President Percy Locke, St. Thomas; W. R. Catton, Brantford; George E. Gathercole, 1st vice-president, Ontario Hydro, and R. S. Reynolds, Chatham.

IN THE LOOKING GLASS

... as others see us

Dear Sir:

This is just to confirm that I have been getting copies of Ontario Hydro News regularly, and I am always happy to go through this valuable publication which keeps me in touch with developments in the Hydro Power Commission of Ontario, where I had the honor of being a trainee under the Colombo Plan during 1955. My address continues substantially the same as what I had left with you except that my designation has now been changed from Senior Lecturer in Electrical Engineering to Professor of Electrical Engineering at the Delhi Polytechnic of India.

R. C. Narayanan.

Dear Sir:

I was delighted to receive the large quantity of material which you sent me describing the St. Lawrence Power Project.

I am sole teacher in the Junior High School here on the North Shore (formerly Canadian Labrador). Having travelled through most of the Seaway area at the time it opened, I have been disappointed at finding no account of this project in our antiquated text books.

We have five keen students in Grade IX who "eat up" material like this, and I am trying to inspire the boys to go on to complete their high school course in Montreal and Toronto. This may supply the vital spark!

Mrs. Rosalie A. West.

Two sides to the story

Ontario Hydro News had an article by Max Lambert which points out that an increasing number of motor vehicles are being left out in the cold. Ontario Hydro now leaves 80 per cent of its vehicles out of doors.

One argument against heated garages is that they accelerate corrosion. Salt and ice that would remain frozen and largely harmless outside, sets to work on paint and metal as soon as it thaws in a garage.

All this is undoubtedly true from a dollars and cents point of view, but there are other considera-

tions. For one thing, it's more comfortable to climb into a warm vehicle on a zero morning.

For another thing, after an all night snowstorm all the windows are often heavily coated with ice and snow. Too many motorists merely clear away a little spot in the front windshield and drive away. It's dangerous to drive with visibility blocked from the sides and the rear.

Orangeville Banner.

Special interest

I wish to express to you my thanks for your kindness in putting my name on the mailing list of the "Ontario Hydro News".

I have a particular reason for being interested in Ontario Hydro—my mother's uncle was Daniel Detweiler, who had a life-long interest in Ontario Hydro. He was at one time president of the Michipicoten Power Co. which supplied power to various gold and iron mines in the district around Michipicoten. For eight years my father was superintendent of the plant there, and my early years were spent by the Michipicoten.

I still have a toy electric motor given me by Mr. Detweiler 50 years ago. It is a pity he never lived to see the opening of the St. Lawrence Seaway, a combined hydro and waterway project which was one of his dreams, and for which he worked with enthusiasm and vision.

F. F. Beattie, Dundas, Ontario.

Lady Heating Expert



Believed to be the first woman in Ontario to take the rather complicated and technical electric heating certification course, Miss Joan Force, sales manager of Woodland Sales, is shown here engrossed with insulation values in wall construction. She is flanked, left, by chief instructor Malcolm Beverly, Ontario Hydro, and right, Charles Crease, consumer service engineer, Central Region.

The intensive, 30-hour certification courses are aimed primarily at acquainting electrical contractors with all aspects of electric heating installations. They

are sponsored jointly by the municipal utilities, the Electric Heating Association and Ontario Hydro.

Miss Force is taking the course so that she will be in a position to advise others on technical matters relating to the fast-growing field of electric heating.

Oil Pipeline System Supplies Subdivision

Glenn Cairn, a 2,000-home sub-division at Hazeldean, just west of Ottawa, is supplied with fuel oil for heating purposes by means of a central storage area and an underground distribution system. Meter readings are taken monthly. Thought to be the first of its kind in Canada, the system does away with oil tanks in the home and eliminates the familiar delivery tanker.

Western District A.M.E.U. Elects New Executive

At meetings in London and Chatham, the two sections of the Western District A.M.E.U. elected the following executive for 1962-63: C. V. MacLachlan, Ingersoll, president; J. F. Anderson, Leamington, vice-president. Directors elected were: D. A. Rolston, Strathroy; Glenn Sanderson, Woodstock; Robert Reynolds, Sarnia, and Glenn Fisher, Windsor. Secretary-treasurer is Ken Gerhard, Ontario Hydro.



OFF THE WIRES



Water is an intriguing substance. It floats ships and thus enabled man to explore and settle his environment and to engage in world trade. It contains fish which have contributed towards man's sustenance down through his history. It nourishes plants and animals upon which man's diet is largely dependent. And it turns wheels, thus contributing substantially to better electrical living. Some people even drink it.

But water has two serious drawbacks-one psychological and the other physical. It fascinates people to the point where they feel compelled to swim through it. boat on it, ski over it and fish in it. And while it contains plenty of oxygen, man's breathing apparatus has developed past the stage where he can make use of it. That is why the Canadian Red Cross has set aside June 3 to 9 as "National Water Safety Week," during which the Society will do everything in its power to make us "water-wise."

But bitter experience suggests that 1,000 Canadians will die in the water this summer for the want of a breath of air. We can't live without water, but we can learn to live on, in, and around it. Like electricity, water has only to be treated with common sense and respect.

We have nothing but admiration for the learned folk who contribute those scientific gems to the Ontario Hydro Research News. Recent editions have included such light literary snacks as "Tower Proximity Effect on Conductor Gradients", "Economies in Operation of Large Electrical Apparatus Through Insulation Measurement", and the more frivolous "Power Loss and Meteorological Instrumentation at Coldwater Project."

This being the usual fare, it was disconcerting to find in the

latest edition a little thing called "Repair of Woodpecker Damage to Wood Poles." It is to the everlasting credit of the author that he was able to treat this earthy subject in exactly the same style his colleagues would adopt in discussing sinusoidal variations of varved clay.

The article puts the finger on the northern pileated woodpecker as the most damaging, but, to be fair, acknowledges that "In areas where coniferous trees are plentiful, poles are less likely to attract woodpeckers, the trees being attacked in preference." In his search for a suitable material with which to stuff woodpecker holes, the author-researcher noted that he was looking for "a dark resilient solid unattractive to woodpeckers." Regarding the actual field trials, he said that poles were selected which had been "subjected to heavy woodpecker attack," and that one hole, "of sigmoid configuration," extended completely through the pole.

Reassuring as it was to learn that a suitable material had been found, it was even more comforting to know that our scientists can take assignments like this in their stride.

In all seriousness, the question of woodpecker damage is one of considerable economic importance to electrical utilities and others whose equipment is vulnerable to feathered attack.

Electricity is pretty well taken for granted these days, but it wasn't always so. A short column which appeared in the Sault Daily Star contains food for thought. Describing the coming of electric service to Searchmount, northeast of the Sault, the newspaper account included these comments from the inhabitants:

"I was finally forced to wash today. I've been saving my laundry for three weeks hoping the power would be turned on, but finally it just had to be done."

"I had planned to go to town Friday, but I won't now, I'll be waiting at home for the lights to come on."

And, "This is really something to celebrate. Power night for Searchmount will be bigger and better than any New Year's yet."

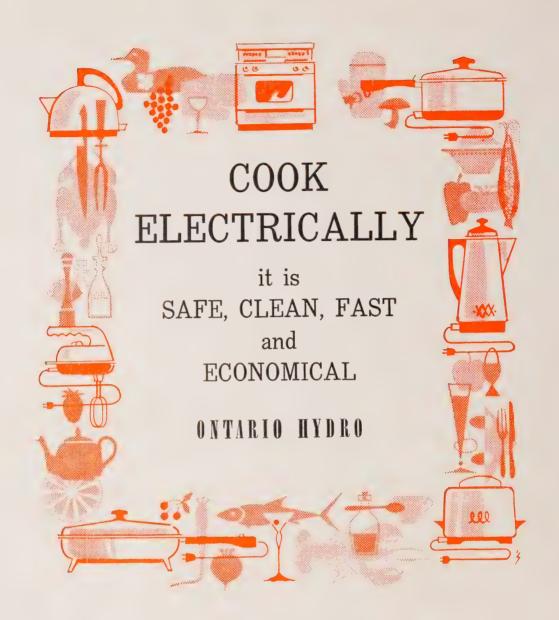
"Come spring," the column says, "the dumping grounds will be a real graveyard for irons, gas washers, toasting racks and all the other things that electric power has made obsolete."

Hockey players, lady wrestlers and pole sitters never seem to lack public acclaim, but its rare when anyone in so mundane a position as secretary-treasurer of a P.U.C. draws comment in the press. More power to Mrs. J. P. Reid, who recently retired from that position with the Georgetown utility, and drew this comment in the Georgetown Herald:

"... Those of us who may at one time or another have had reason to deal with her, found a stern yet kindly attitude at all times, and if by chance we didn't quite make it for the "fifteenth" we were soon set to right . . . without the discount, which is as it should have been. At the same time, I can wager that many a time her own purse was opened when someone, unable to pay, was in danger of being cut off.

"For myself and all other grateful Hydro users, I salute Mrs. Reid, or, as she was affectionately known by many of us, 'Mrs. Hydro', and wish her many years of happiness in her well earned retirement."

Amen to that and congratulations to her successor, A. Graham Farnell. As a member of the Georgetown Hydro Commission for 20 years and Chairman for much of that time, he has a head start in public service.



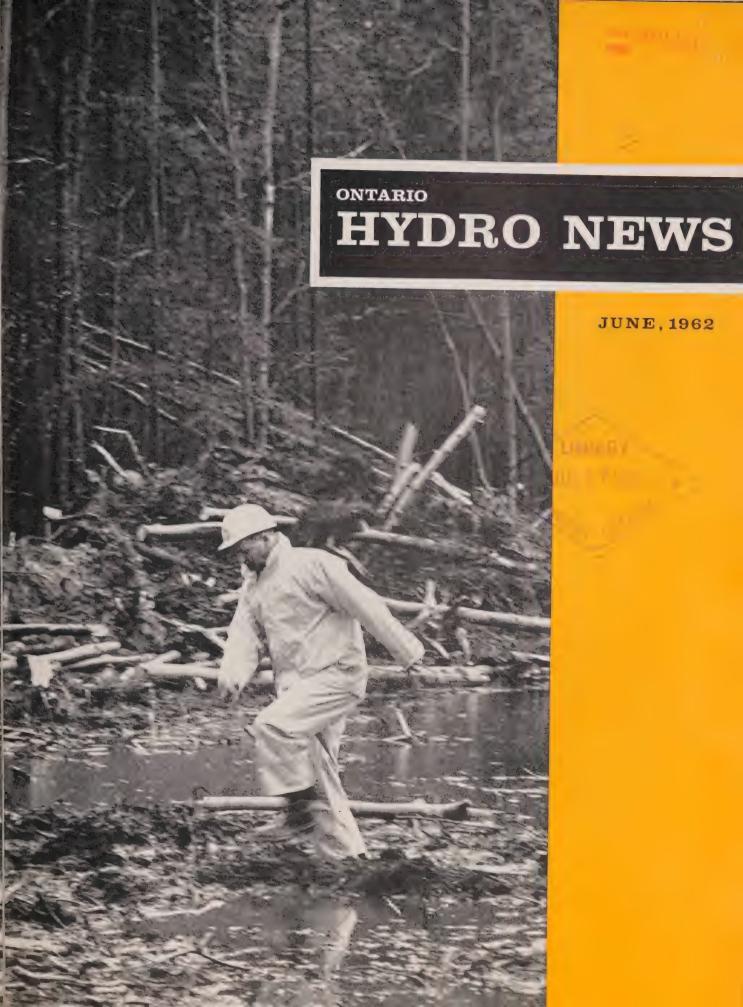
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TOWN or CITY PROV.

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Through the Eye of an Expert

The man with the jeweller's glass is John Huxtable of Toronto Hydro's Meter Department and his trained eye is checking rotor alignment. John is typical of the capable people behind the instruments keeping accurate tab of Ontario's electrical consumption. Further details of this exacting science commence on page four.



Sleighride in July

The sight of this giant sleigh making its way through the northern wilderness at the height of the summer is enough to make anyone take the pledge. But it makes sense to the men constructing Ontario Hydro's extrahigh-voltage transmission line where this mode of transportation proved best for moving heavy materials. Further details will be found on page 12.

JUNE, 1962

ONTARIO HYDRO NEW

CONTENTS

- I Grass Factories
- 4 Riding Herd On Kilowatt-hours
- 9 London P.U.C. Is A Good Neighbor
- 12 E.H.V. Is Rough Going
- 16 These Kilowatts Went To Market
- 18 Associations Enjoy Top Leadership
- 21 Along Hydro Lines
- 25 Off-The-Wires

THE COVER

This month's cover is designed to refute a suggestion that modern transmission libuilding is a sissy proposition where everyoflits about dry and comfortable in helicopte Assistant Line Superintendent Bruce Marsh is the lonely figure slogging his way along tE.H.V. right-of-way and who can blame him he failed to wipe his feet before traipsi across the back cover?

THE COMMISSION

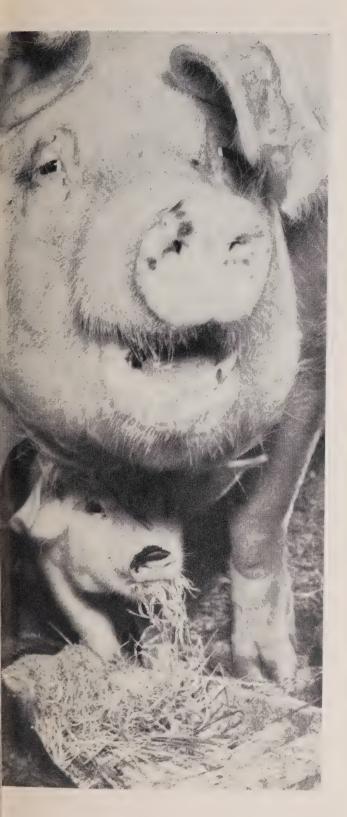
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"GRASS" FACTORIES

down on the farm

by the editor

Down Iowa way they claim the soil is so rich it's dangerous to plant corn. After dropping the seed you have to jump back fast or be hit in the eye with the sprouting stock.

Things are a little slower up here in Ontario, but not much. Some farmers are now able to raise an eight-inch turf for poultry and livestock feed in just six days—and they are doing it winter and summer.

The answer is hydroponics, the art of growing plants, under controlled conditions, without soil. This is not a new idea, since plants have been raised, as novelties, in a glass of water since grandmother's day. But only in recent years has it been attempted on a commercial scale. Nearly a dozen Ontario farmers have installed "grass factories"—plants costing thousands of dollars, whose sole output is rich "spring" turf all year 'round.

The object is to provide the magic of fresh green growth during poor pasture months, but some are using it year 'round to avoid seasonal variations in feed. The turf is intended as a food supplement rather than a bulk nutrient, and it is being used in Ontario to help raise poultry, beef and dairy cattle, swine and race horses.

"It's just a matter of feeding oats into one end and taking out succulent green turf at the other," said Roy Beckett, when asked to explain how the hydroponic production units work. He and his brother George are proprietors of Beckett Farm Machinery Ltd., Tillsonburg, which has recently

Assisted by electricity, Ontario farmers are

using hydroponics to produce lush green growth all year 'round.

acquired Canadian manufacturing rights for equipment produced in the United States by Hydroponics Inc. And it is almost that simple—if you say it fast.

The equipment they handle consists of an airtight, aluminum-sheathed building, or "growth chamber", on an insulated base. The interior is brightly lighted by fluorescent fixtures, and most of the room is taken up with tier upon tier of metal travs. Located outside the chamber is a grain hopper from which an auger feeds oats into soaking tubs within the building. After soaking for four hours, the oats are let stand for another 44 hours before they are spread thinly over perforated metal trays lined with an edible cellulose.

A standard unit, as manufactured by Beckett Farm Machinery, contains 60 of these trays. Normal practice is to fill the tiers in rotation so there is a fresh supply of sprouted oats in the lower layer of trays each day. Irrigated once a day, and with the addition of a plant nutrient solution into the water, a six- to eight-inch growth is achieved within six days. A pound of oats represents up to 10 pounds of green feed, and a single standard unit will produce about 3,500 pounds of this food supplement in a week.

A constant temperature of 70°F, in the growth chamber is important, and this is maintained with the use of a small air-to-air heat pump, supplemented by electric strip heating during the coldest weather. Electrical controls govern the automatic irrigation, lighting, heating, air-conditioning and grain feed.

While the electrical consumption has not been precisely established, a double, 120-tray unit, has a connected load of about 8.74 kilowatts, and electrical energy accounts for roughly one half of the cost of operation, not including grain and labor. From a supply utility's point of view, it might not be a bad thing if every farm animal developed a craving for green oats all year 'round, for the load characteristics of this type of installation are most desirable.

Farmers, of course, are from Missouri when extra cost is involved, and they are not likely to embrace hydroponics simply as a means of tickling the gastronomic fancies of their animals. Among the downto-earth benefits of this dietary supplement, according to the Becketts, are improved animal health, and, therefore, lower veterinary costs; longer lactation



Lush green turf, above, was just oats six days earlier. Photo was taken in growth chamber of hydroponic unit at farm near Blenheim, Lower photo shows a thoroughbred munching hydroponic "grass" on farm of General Churchill Mann.





The eager Holsteins, top, belong to Wilson Armitage who is first Ontario dairyman to try hydroponics. Hog in lower photo is just living up to his reputation. He isn't aware that green oats are just a dietary supplement.



periods for cows; improved breeding records and lower feed costs.

Practising what they preach, the Becketts feed hydroponic oats to their own poultry. Green oats form 10 per cent of the diet of some 128,000 broilers raised annually. They claim reduced chick losses, lower feed costs and sweeter, juicier meat. Under consideration is a plan to market frozen broilers as "hydroponic raised".

Elsewhere in the province, hydroponics is helping to raise a variety of animals. Alex Parsons, of London, has used this method for two years, and claims it is producing fleeter and healthier race horses. And, at General Churchill Mann's farm near Aurora, some of North America's finest thoroughbreds have been enjoying hydroponic oats for a number of years.

At a more work-a-day level, Wilson Armitage, of Arva, has recently become the first dairyman in the province to try hydroponics. He has installed a 120-tray unit to supplement the diet of his 63 milking holsteins. Each milking cow gets 12 pounds of the green feed per day. He reports that one man-hour per day is all the labor required to operate the double unit.

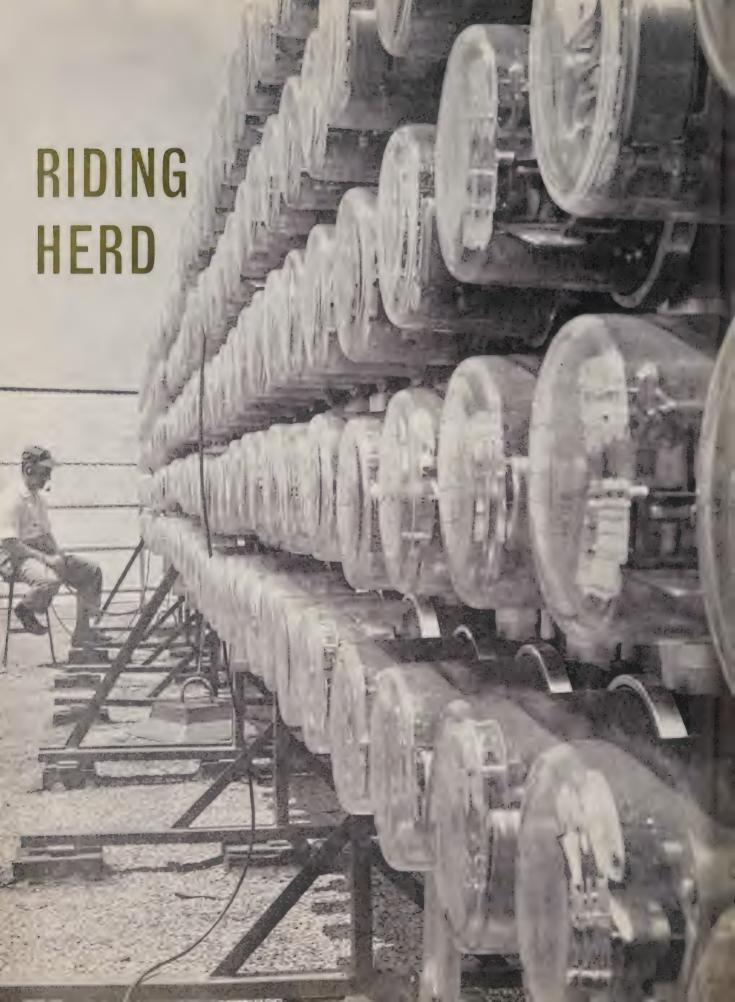
And, at Guild Manor Farm, near Blenheim, owned by veterinary surgeon C. M. Smith, purebred Wessex saddleback swine are virtually making pigs of themselves over oats raised in a recently acquired hydroponic unit.

But it is still far too early to predict the ultimate role of hydroponics in farming. Data based on controlled scientific testing is largely unavailable in Canada, while in the United States, where hundreds of hydroponic units are in use, agricultural authorities have mixed feelings.

Dr. M. P. Plumlee, of the Department of Animal Husbandry, Purdue University, is cautiously optimistic. He says: "You should consider this product similar to early spring grass. This is a good supplement and a feed which should improve digestibility of other constituents."

Users are more outspoken. Alex Parsons, of London, is quoted as saying: "I've got great faith in the machine. It's a quality conditioner of a calibre available from no other source."

Hydroponics — gold mine or gimmick? — has yet to be conclusively established.



If you have ever wondered about the possibility of your electric meter running fast and costing you more than it should for electricity — don't worry. Hydrometers are seldom wrong.

Maybe your wife has a habit of forgetting to turn off the stove. Or perhaps you've overlooked that new spin dryer in the basement.

In any case, take a good look elsewhere for the cause of that higher-than-usual Hydro bill.

Ontario Hydro and the 354 associated municipal utilities, with over 1,900,000 customers among them, take every precaution to ensure that your meter doesn't run fast. They're just as concerned that it doesn't run slow, of course, since this would also cost you money—Hydro in Ontario being publicly owned.

It is a fact that the same Federal law that guarantees correct weight at the supermarket checkout, and correct measure at the gas pump, applies also to your electric meter.

That hardly a meter in a million is inaccurate is a tribute to the manufacturer and the modern meterman, who is a highly skilled and responsible technician. With him it's a matter of pride that meters don't err.

Backing him up is the general reliability of the electric meter itself; a Hydro research program seeking constant meter improvement; the strict meter acceptance specifications of Ontario Hydro and the utilities; and carefully enforced government regulations.

For the record, your meter is simply a small motor. Power passing through it spins a center disc that in turn moves the dials on the meter's face to keep tabs on consumption. Total revolutions in a given time are proportional to the total electric energy expended in that same period.

The domestic meter is a complex piece of equipment that, by government decree, must be overhauled and recalibrated at least once every eight years.

It's in this sphere that the meterman (not to be confused with the man who reads the meter) plays his big role. His is the task of checking, cleaning and recalibrating meters. This whole procedure comes under the title of "reverification". And it's in the utility meter shop that this work is carried out.

Though larger than most, Joe Douglas' Scarborough shop is fairly typical. Scarborough P.U.C. has upwards of 67,000 meters in service, about 80 per cent of them the domestic type.

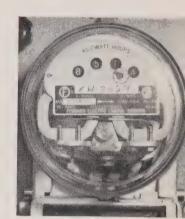
Mr. Douglas began as a lineman with Scarborough in 1922, and switched to meter work in 1928. At that time he was the Meter Department's sole representa-

oof of Ontario Hydro's new research
ry, technician L. V. Kelly does monthly
on check on one of 250 sample domestic
rt up for long-term accuracy tests.

on kilowatt-hours

by Max Lambert





These are two types of domestic meters in general service throughout Ontario. Favored by some utilities, the meter, right, has the easy-to-read cyclo dial for registering consumption. Clock dials on other meter are more common.

tive. Today, as department supervisor, he has a staff of seven working with him.

The utility's meter reverification is a smooth, efficient procedure. Consignments of meters come into the shop and move speedily through carefully controlled and inspected processes. The meters are separated from their glass cases and the inner workings cleaned. Later the jewelled thrust bearings are cleaned independently and replaced if necessary.

After instrument checking and cleaning, the meters are reassembled and recalibrated precisely against master meters. Finally, they go into a test room where government inspectors give the meters a thorough going over before the government seal of approval is applied. No new meter or a reverified meter can be placed in service without this seal. Installation, of course, is also the meterman's responsibility.

Ontario Hydro's own meter shop, one of the largest in Canada, is responsible for close to half a

... an account of the men, meters

and methods employed

to keep tab of Ontario's vast

electrical consumption.



In Toronto Hydro's modern meter shop, Elliot McBroom, left, meter engineer, inspects work in service area. Mr. McBroom heads A.M.E.U.'s Metering and Service Entrance Committee.

million meters. This year the shop will handle around 110,000 meters. Of this total about 70,000 will be reverified. Another 28,000 will be new meters to be checked before installation. Four and a half thousand will be in for rebuilding. The shop reverifies about 300 a day.

Rejection of Ontario Hydro-checked meters by Federal inspectors in the final phase of testing is extremely low, says Vern Hunt, meter engineer. "Less than one per cent come back to us for further recalibration," he adds.

In most cases Ontario homes have one meter only. Those heated electrically generally have a second meter to register the heating load separately. But this is changing. Some utilities now are switching to a single meter to record heating and normal domestic consumption. At the home level, all electrical consumption is metered with the exception of energy provided for flat rate water heating.

And in the commercial field meters of various types are employed, together with a different system of billing. Most larger consumers establish a monthly 20-minute peak load. They pay on the basis of this peak and also on straight consumption within the monthly peak.

Regional engineers supervise the metering of Ontario Hydro's direct customers. These are in three classes: utilities, large and small, which buy their power from Ontario Hydro; the Commission's rural operating areas; and industrial customers such as the big steel and paper mills, mines and certain manufacturers.

At the heart of Ontario Hydro's meter system is the Electrical Standards and Metering Section of the Research Division.

Here, under the direction of J. M. Vanderleck and Chief Technician Tom Morgan, all specifications and meter requirements are established and policed. "Our specifications are tough," Tom Morgan says proudly, "even tougher than those of the government."

The section checks every type of meter as it comes on to the market to make sure it meets Hydro's exacting standards. Tom has noted a big improvement in meters over the years, and attributes much of it to the high standards established.

The section regularly recalibrates the test meters from Ontario Hydro's meter shop and, periodically, sends its own master meters and standardizing equipment to Ottawa—to the Department of Trade and Commerce's Standards Division—for checking.

Another important phase of the Electrical Standards and Metering Section's work is the long-term accuracy tests of sample domestic meters. About 250 currently are undergoing checks. Some tests have been underway for nine years, others will run 30 years. The latest batch of meters under test have rotors supported magnetically to eliminate the friction associated with thrust bearings.

Federal regulations, which require testing of meters every eight years, may possibly change someday, if these tests show that meter accuracy doesn't decrease significantly over a longer period.

Few places in the world outdo Ontario in the per capita use of electricity. And we owe a debt of gratitude to the men who measure the billions of kilowatt-hours consumed annually in this province with an accuracy unsurpassed anywhere.

Federal inspector Frank Mason melts wax meter before applying government stamp of al at Ontario Hydro's meter shop. No me be used without th



the metermen

With the over-all aim of promoting good practice in the field of revenue metering, the metermen of Ontario are organized into five area associations whose work is coordinated by the Metering and Service Entrance Committee of the Association of Municipal Electrical Utilities.

Activities of this A.M.E.U. committee are concentrated in two areas (a) preparation of a section for inclusion in the A.M.E.U.'s Guide of Municipal Construction Practices and (b) co-ordination of the affairs of the metermen's associations.

The five area associations—Central Ontario, Western Ontario, Grand Valley, Eastern Ontario and Niagara — were formerly represented by a Central Meter Council, now disbanded.

Joe Douglas of Scarborough, and H. E. McBroom, Toronto Hydro's meter engineer, report that the ultimate aim is to form an association in each A.M.E.U. region, with representation on the regional executive.

Top priority at the moment is being given to the organization of a two-day workshop, scheduled to be held November 15 and 16, in Toronto. From 150 to 200 metermen are expected to attend. Lectures, demonstrations and work methods will be featured.

SAFETY

in the SCHOOLS

Ontario Hydro is teaching children the basic rules of electrical safety.

A DOUBLE-BARRELLED program of electrical safety aimed at elementary and secondary school students throughout the province is being carried out by Ontario Hydro.

A series of safety posters produced by Ontario Hydro last fall in co-operation with the Department of Education of Ontario have been displayed on school bulletin boards at appropriate times during the year. The posters point out the damage that can result from throwing stones or shooting at insulators on poles, the hazards of fallen lines, and the dangers of flying kites and model airplanes close to power lines.

Three copies of each poster were sent to 6,934 elementary and 747 secondary, private and special schools in the province. Copies have also been sent to all Ontario elementary and secondary school inspectors, Department of Education officials, including Teachers' Colleges throughout the province, local municipal electrical utilities and Ontario Hydro's regional and area offices.

The posters proved so popular that Ontario Hydro received a number of requests for additional

The following letter from C. E. Macdonald, principal of St. Catharines Collegiate Institute and Vocational School, typifies reaction to the safety posters:

Dear Mr. Blay:

May I, on behalf of the staff and students of the St. Catharines Collegiate Institute and Vocational School, thank you for your posters given to us this past year.

Since ours is a large school, and since we have a very large Technical Department, I believe you would find it of value to send to us at least 25 copies.

Again, many thanks.

Yours sincerely, C. E. Macdonald (Prin.)

Many suggestions were also received that the messages be produced in French. In response, Ontario Hydro prepared the third poster in the series—the dangers of flying kites and model airplanes close to power lines-in both languages, since there are more than 85,000 French-speaking students enrolled in 509 separate schools and 31 secondary schools in the

Response to the French posters is illustrated by this letter from Georges Lecuyer, C.R.C.S.S. No. 1, Black River, Hottyre, Ontario, translated from the French:

Gentlemen:

I want to congratulate you for the happy initiative you have shown in sending us the safety posters in French. You rendered justice this way, to thousands of customers who appreciate your gesture.

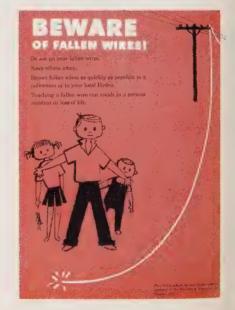
The posters are very much appreciated by the students. They were used as a dictation subject in the 7th grade. This way the students got the message even better.

> Yours truly, Georges Lecuyer

It is planned to issue a further series of posters during the 1962 and 1963 school term.

For a number of years, too, an animated educational display illustrating the hazards of working near high-tension lines has been shown in schools by the safety staff in Ontario Hydro's regional offices and by qualified municipal utility personnel. Actual conditions of true-to-life accidents have been reproduced in the display with scale models of people and equipment.

John MacLellan, director of Ontario Hydro's Accident Prevention Division, says, "We want to educate people when they're young to respect electricity. As long as there are serious accidents every year resulting from carelessness in the use of electricity, the need for education in electrical safety is important. It has been found that training in good safety habits is well received by school-age children and creates a lasting impression."





Promotion Manager John Vanderheiden wants Londoners to regard the P.U.C. as a friendly and reliable neighbor. He is shown, left, with Park Superintendent Maurice Chapman on a visit to Storybook Gardens, built and maintained by the utility.

Does an electrical utility have any responsibilities toward the community other than providing customers with electric power?

"Very definitely, yes," says V. A. McKillop, general manager of London Public Utilities Commission.

"I feel that an electrical utility should have the welfare of the community at heart, and should try to demonstrate its interest in the members of that community every day, throughout all phases of its operation." As he sees it, "the utility should be a sort of big brother, helping people to live more happily, and to enjoy all the benefits of electrical living."

Mr. McKillop's theories are clearly reflected in the promotional program carried out by London P.U.C.

Many of the utility's services to the community are centred around its demonstration kitchen on the fourth floor of the P.U.C. building. Opened two years ago, the kitchen is fully equipped with major and portable electrical appliances loaned on a rotating basis by various manufacturers.

Carole Cochlan, London Hydro's home economist, presides in the kitchen. She demonstrates various recipes before groups of up to 50 women, and explains

how to operate the electrical appliances. Early in 1962, she introduced the newest service from the demonstration kitchen—a recipe-of-the-month which is handed out at the P.U.C.'s business office to customers paying their Hydro bills. She also

answers a steady stream of telephone inquiries, and demonstrates appliances, by request, to individuals who are planning to buy sometime in the future.

The home economist is also available to Londoners who wish assistance in operating major appliances in

LONDON Cted in the control on P.U.C. Community en on the two years major and a rotating Ceconomist, es various dexplains COOD Iries, and adividuals future. Londoners Condoners Con



Everybody in London knows Carole Cochlan, the utility's talented home economist. Here she is presiding in the demonstration kitchen where women's groups come to catch up on the latest in appliances and cooking techniques.

their own homes. During these calls she frequently takes the lady of the house to the basement and explains the function and operation of the service installation.

John Vanderheiden, P.U.C. promotion manager, reports that he has received several telephone calls from grateful husbands expressing their appreciation for this service.

He also points out another advantage of having a home economist and a demonstration kitchen in the P.U.C. building. On occasion, Miss Cochlan can

be persuaded to prepare luncheons for commission meetings.

John heads a department established in 1959, when the utility recognized that a trained and experienced man was needed full time in the dual role of sales promotion and public relations. He has been with the P.U.C. since 1917, and was a safety supervisor and assistant plant superintendent prior to his present appointment. His is a five-man department, but he likes to think every P.U.C. employee is a member of his staff where the business of building a good utility image is concerned.

Never reluctant to try new methods, London P.U.C. recently introduced a range and dryer receptacle plan which makes installation of these appliances as simple as plugging in a toaster. Pioneered in Ontario by Sarnia Hydro, the plan offers customers extra convenience, and will eventually save the utility money since it connects and disconnects these appli-

ances without charge.

Long concerned with customer accommodation, the utility was among the first to introduce a time payment plan for wiring. Since its introduction in 1956, the plan has been responsible for more than \$100,000 worth of business. Under a recent arrangement with a bank concerning the purchase of appliances on time, the utility has little to do with the actual transactions other than to act as guarantor of the loans.

In a similar vein, London P.U.C. operates a 10man appliance repair section although it no longer operates a Hydro shop. "This is another way we can serve our customers," John Vanderheiden explains, "and while we charge rates comparable with others, we carry a large stock of parts and aim at a two-day service. It's good business to keep our customers operative—I'd like to see the day when we can provide stand-by major appliances during emergencies."

London P.U.C. already supplies electrical appliances to home economics classrooms throughout the city; loans portable electric heaters for a week to 10 days during the winter months to prospective customers; and operates an active water heater rental, maintenance and promotional program.

General Manager McKillop takes particular pride in the utility's success with underground distribution systems in new subdivisions. He feels that, with underground distribution, the utility is not only selling electricity, but also promoting aesthetic values in the community as a whole.

London is one of the very few Ontario municipalities where underground distribution is compulsory in all new housing developments, and Mr. McKillop believes it is working out to the advantage of all concerned. Customers appreciate the improved appearance, and increased value, of their properties, while the builders find themselves on equal terms

This utility believes community approval is worth going after.

with each other—no one enjoying the advantage over the other.

The builder and, ultimately, the customer, is assessed the extra cost of underground distribution, but rebates are provided for the use of specific electrical appliances. Mr. McKillop has noted very little dissatisfaction with this approach to underground distribution, and he feels this is due, in part at least, to the P.U.C.'s excellent reputation within the community. He believes that the people of London have come to respect the commission's judgment and realize it is working in their own best interests.

London P.U.C. is one of the few utilities which are responsible for water works, parks and recreation as

well as electrical supply.

"From the point of view of promotion," Mr. McKillop says, "these departments are a mixed blessing. While we do have greater opportunities to work with the people of London, we also have many more areas in which we can be vulnerable."

More than 3,000 Londoners took advantage of the Recreation Department's programs in adult community centres last year. A separate program is provided for senior citizens. Parks and supervised playgrounds which have extensive sports and crafts programs, are maintained during the summer months for schoolaged children. In Springbank Park, near London, the P.U.C. has built and maintains Storybook Gardens, made famous three years ago by the antics of Slippery, the wandering seal.

A rather unique project which falls under the Recreation Department's jurisdiction, but which is followed closely by the entire utility, is the P.U.C. Children's Theatre. Children interested in the theatre enrol in the workshop sessions, to learn techniques of makeup, costuming, lighting, and the stage. At the end of each workshop, everybody participates in the production of a play, to which the general

public is invited.

John Vanderheiden points out the philosophy here. "Succeed at this level and the children will grow up regarding their public utility as a friendly and reliable neighbor."



Children's Theatre comes under the wing of Recreation Department but typifies utility's interest in the public welfare. It teaches youngsters the fundamentals of theatre while promoting participation in community affairs.

Men and machines

are slugging through

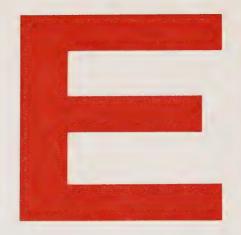
the worst kind

of northern terrain

to keep the

extra-high-voltage transmission

line on schedule.



Man's ingenuity and perseverance under adverse conditions has seldom been more severely challenged than at Ontario Hydro's zone construction office at Timmins and in the surrounding countryside.

This is command headquarters for the construction of a new super-highway of power from Ontario Hydro's far-northern plants to loads in Southern Ontario. Across 230 torturous miles of trackless muskeg and rock, the first phase of the extra-high-voltage line will arrow its way from Pinard, a power collection point 60 miles north of Cochrane, to Hanmer, near Sudbury.

After the 60 degree below zero temperatures of last winter, the work force is now confronted with the black flies, mosquitoes and open muskeg of summer in the North. Added to this are problems never before encountered in the Commission's 50 years of line-building experience, for E.H.V. is something new to Ontario Hydro—unique in many respects the world over.

Entry into the field of extrahigh-voltage transmission was undertaken in order to develop power sites on the Abitibi and Mattagami rivers to meet the increasing demands in Southern Ontario. Conventional transmission lines are subject to large power losses over long distances and limited in the amount of power they can transmit.

In tests conducted earlier by Ontario Hydro it was established that



Loaded with a six-ton cable reel, the muskeg tractor, top, takes rough going in its stride. High-wire acrobats, right, are actually Hydro linemen at work spacing E.H.V. conductors.





rough going



High above the formidable right-of-way, linemen, top, place mid-span spacers with the aid of a motordriven cable car. Lower photo suggests why transportation is a major problem in keeping the job on schedule.

the most economical method of transmission would be at voltages in the neighborhood of 500,000 volts. Since this was higher than any voltages previously utilized in North America, it was necessary to develop new methods of construction and design new equipment.

Chosen was a four-conductor bundle held in a square configuration and mounted on inverted triangular towers guyed for stability. Engineering requirements prohibited the scratching of the conductor wires, since surface damage causes power loss and radio interference.

Perhaps the most formidable challenge was one of logistics. For, like transmission lines everywhere, E.H.v. follows the shortest route from its source of supply to its load distribution point—without regard for the nature of the intervening terrain.

Except for its brief encounter with civilization at Timmins, the present phase of the new line is far removed from normal channels of supply by road, rail, or water. Each component must be delivered on site to a closely integrated schedule -from heavy tower steel and huge eels of cable to the smallest item of conductor hardware.

Currently, a 400-man work force pread over a 60-mile stretch of right - of - way is battling time, veather, and the most formidable errain in Ontario in an attempt o maintain schedules. Supervision

Etched against the northern sky, this triangular steel tower is a vital link in Hydro's new highway of power. Aluminum towers have also been used.

of this force, and over \$1 million worth of construction equipment, is aided by the use of the helicopter, the only effective means of rapid travel.

In constructing the new line, Ontario Hydro first sent its survey crews out to provide a route plan and profile. Close behind came the slashers, mostly small contractors, who cleared the 200- to 220-foot right-of-way. The clearing is now about 60 per cent complete in the first phase.

Last winter, in temperatures ranging down to 64 degrees below zero, actual construction of the line was started. By spring some 30 miles of towers, mostly aluminum, had been erected and guyed. In addition, several miles of conductor were strung under tension.

To the present far-flung work force, the power-winch—even the small four - wheel - drive station wagons have them—and the muskeg tractor are the difference between mobility and hopeless stagnation, as they carry men and the smaller supplies to, and along, the right-of-way. Heavier supplies and equipment move on tractor-drawn sleighs and skids.

Each mile of line requires over 25 tons of tower steel, two tons of insulators, some 24 tons of conductor, 14 anchors, and three to four tower bases as well as 90 spacers and a great variety of smaller hardware.

The line will be extended almost 70 miles south of Timmins this summer. Activities will switch to the northern leg of the project for the coming winter—the only time of the year in which it is feasible to build over the extensive muskeg encountered.

The Pinard to Sudbury section is scheduled to be completed by the fall of 1963.



stringing without scratching







Tensioners, left and centre, pay out four cables simultaneously. Strain is controlled hydraulically, right. Pulling is done by a winch located at opposite end of the 10-span section.

The problem: to string four-conductor bundle between E.H.V. towers without scratching the cables.

The reason: engineering studies show that each scratch increases corona, resulting in line loss and radio interference.

The solution: string under tension taking every feasible precaution to prevent cables from contacting each other or being damaged at other points of friction. To arrive at a solution, Ontario Hydro engineers and line crews had to design and adapt methods, hardware and equipment which would be as effective in the rock and muskeg terrain of the north as they were in pilot tests under ideal conditions.

The result: a method which is answering all requirements. Travellers (plastic coated pulleys) are attached to the heavy insulators on the towers. Through these a bull line is strung for 10 spans (about 14,500 feet) and attached to the puller, a hydraulically powered

winch. At the far end of the span the four conductors are payed out from six-ton reels through specially designed tensioning machines, adapted for use in the rough terrain. Kept under a minimum tension of 2,000 pounds each, the four conductors roll through the travellers until the 10 spans are strung. They are then snubbed to the ground under tension, ready to be spliced into the next span.

When the conductors are sagged (tensioned to engineering specifications), linemen replace the travellers with special hangers which hold the conductors in the necessary square configuration. The conductor is protected by special plastic shields as the transfer is taking place.

Final operation is the placement of mid-span spacers at pre-determined positions. This is accomplished by a lineman riding in a specially designed cable car which is suspended from the conductors and powered by a small air-cooled motor.



THESE KILOWATTS WENT TO MARKET

One of the world's largest electrically heated and air-conditioned merchandising marts — Shoppers' World — has opened in eastern Metropolitan Toronto.

Much of the credit for the extensive use of electricity in Shoppers' World goes to East York Township Hydro-Electric Commission, and Dusan Lazarevich and Associates, consulting engineers. The utility worked closely during planning and development of the shopping centre's electrical features with the consulting engineers, architects and Ontario Hydro. The reward—some 2,500 kilowatts of highly-desirable load.

Approximately 5,200 kilowatts of electric heating, air-conditioning and lighting have been installed in the modern marketplace, which includes some 47 separate units totalling 300,000 square feet of shopping area and 2,500 square feet of entrance-way—all enclosed.

The electric heating and cooling system in Shoppers' World is flexible to permit air-conditioning and heating simultaneously in different areas throughout the building. The system—representing an installed

Electric heating in customer com









mditioning provide the ultimate

noppers' World

capacity of 3,200 kilowatts—is controlled by more than 80 thermostats.

Year-'round temperature control starts with two refrigerator-compressors, having a capacity of 950 tons, which extract heat from water in a large storage tank. The chilled water is pumped from the refrigeration equipment to 37 air-handling units throughout the building, and is used as required to air-condition each of the 37 zones.

To ensure that illumination throughout Shoppers' World is both pleasing and adequate, over 2,000 kilowatts of lighting have been installed. An average of 70 foot-candles of general illumination is provided in all shopping areas and in the mall. Over display areas, where it is important that merchandise be shown to the best possible advantage, an average of more than 100 foot-candles of illumination has been installed.

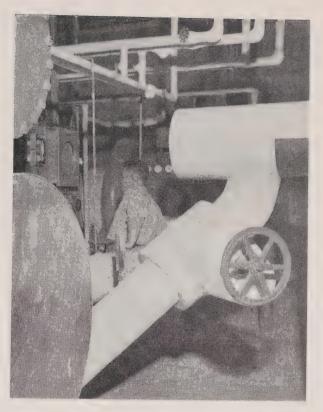
In the parking lot adjoining the shopping centre, an underground distribution system supplies 550-volt fluorescent flood-lights mounted on specially designed lighting standards.

So that the parking lot lighting would not be in strong contrast to street lighting, East York Hydro replaced 18, 500-watt incandescent fixtures on Danforth Avenue with mercury vapor lights. On the south side of the street, where the shopping centre is located, nine wooden poles were replaced with spunconcrete poles, and underground wiring was installed. To handle the added load, East York Hydro installed two new 2,000 kva transformers in a nearby substation.

Jim Wickiam, East York Hydro manager, explains that, in Shoppers' World, the demand for electric heating will be lower during the daytime when the lights are operating than through the night and on holidays. Because more heating is required during off-peak periods, special rates were developed for this night-time energy.

Mr. Wickiam feels that Shoppers' World will lead the way to more large commercial installations of electric heating and air-conditioning throughout Ontario.

"Once people, especially maintenance people, see that the advanced system in use at Shoppers' World has few problems of upkeep," he said, "they'll become interested in electric heating and air-conditioning for themselves."



Heart of Shoppers' World is this modern heating and air-conditioning plant representing an installed capacity of 3,200 kilowatts. Thirty-seven air handling units are equipped with fin-type resistance electric heating coils. Aerial view, below, indicates mart layout.



SISTER MUNICIPAL ELECTRICAL ASSOCIATION

Meet the president

of the Ontario Municipal

Electric Association

Percy R. Locke



Who is that quiet, middle-aged chap sitting up near the front? He seems to be first on hand at every business session and the last to leave."

Should any new member of the Ontario Municipal Electric Association raise such a question at one of the o.m.e.a. meetings held across the province, his veteran colleagues would readily identify the person referred to. It could only be Percy R. Locke, elected

this year to the presidency of the Association.

Mr. Locke has been a member of the o.m.e.a. since 1938, and has served as an executive member for over twenty years. His major contribution in the past was as a member and chairman of the Hydro-Electric Pension and Insurance Plan. He also has served on virtually every major committee of the o.m.e.a. since 1940. His chairmanships included the Finance, War Problems, Conservation of Power and Resolutions committees. Serving continuously on the executive of o.m.e.a. District No. 7, he filled the office of president there on several occasions.

Sincerity of purpose and hard work afford an excellent background for Mr. Locke's endeavors in the O.M.E.A. His readiness to adopt a constructive approach in seeking sound solutions of the many problems facing the Executive from time to time adds to his qualifications.

Soft spoken and somewhat retiring, Percy Locke has gained the confidence of the people of St. Thomas, his home town. He won his first election to the P.U.C. in 1938, and has been returned at each election, often at the head of the polls. He served seven terms as the P.U.C. chairman. He and his son, John, operate a successful insurance business.

In spite of his definite interests in his business and municipal Hydro affairs, his first love was farming, and he still retains a strong interest in the pure-bred Holstein dairy business he knew as a boy.

Born on the family farm in North Yarmouth Township, which was part of 1,500 acres granted his great-grandfather by the Crown in 1830, Percy and his brother, William, have just recently bowed to the inevitable and subdivided most of the remaining acreage which is now within the limits of the City of St. Thomas,

The Locke farm was among the first in Ontario to be equipped with electrical farm appliances and machinery. In 1912, before the advent of rural Hydro service, Percy's father, along with two neighboring farmers, met the cost of extending Hydro service into that area. A flat annual rate of \$108 provided Hydro power sufficient to operate a milking machine, cooking range, immersion type water-heater, washing machine, grain grinder, water pressure system and lights.

As a boy on the farm, Percy well recalls the enthusiastic interest displayed by Sir Adam Beck in the operation of this equipment, and he re-lives the moments when he demonstrated the use of the milking machine to Sir Adam and his daughter, Marion.

While he retains a soft spot in his heart for farming, Percy Locke feels almost as strongly about railroading. Leaving the farm when a substantial part of it was annexed by the City, he secured a position as fireman on the Michigan Central Railroad, and it was not long before Percy, in his long-visored cap, qualified to take over the throttle of a giant steam locomotive.

However, railroading proved to be but an interlude in his career; the "hungry thirties" being a time for sober reflection. The result was that he left railroading and entered the insurance business on the theory that progress in this field would be limited only by his own initiative and ability. His guide to success, which he believes applies to any endeavor, is simply: "Know the people you are

(Continued on page 20)

ONTINUE TO ENJOY STRONG LEADERSHIP

46 WE have just called tenders for a \$100,000 addition to our stores building on Underwriters Road," said Ronald Harrison, veteran manager and secretary-treasurer of Scarborough Township P.U.C., as he leaned back in his chair.

The telephone rang and he swung around with a pad and pencil at his fingertips. It was a customer habitually tardy in paying his Hydro bill, who believed in going to the top. Ron Harrison dealt with him deftly but firmly, and easily picked up his train of thought.

"We are also planning two new substations this year," he said.

This was a morning of typical contrasts for Ron Harrison, who, earlier this year, was elected president of the Association of Municipal Electrical Utilities. One minute he is busy planning Hydro and water services for a 600-home Bronze Medallion subdivision in Scarborough, one of the fastest growing municipalities in Canada. Next minute he may be on the phone to Windsor on A.M.E.U. business or bound for a staff meeting.

Like Scarborough, Ron Harrison is on the move. That's been par since 1923, when he joined Scarborough P.U.C. as waterworks superintendent. Then, 10 workers supplied 1,400 families with electricity and water. Today a staff of 263 serves more than 65,000 customers.

In 1926 the P.U.C. appointed Ron manager of both the Hydro and water divisions. The man and his job had started to grow.

Scarborough mushroomed in the fifties, when a newsman dubbed it "the Klondike of Canada's postwar boom." But records show continual growth since the early twenties.

The record of the fabulous fifties only hints at some of the

obstacles overcome by Ron and his staff in supplying Hydro and water services to a community sprawling across 72 square miles. It reflects his administrative skill and the foresight of succeeding commissions in maintaining services at maximum efficiency during Scarborough's explosive growth. Lowcost power provided the spark.

And the growth continues. Last year Scarborough issued building permits valued at \$58,690,359, and township officials expect more this year. Planners estimate Scarborough will have a population of 480,000 by 1980, with about 183,000 employed in township plants that produce everything from pickles to radar components.

That means Ron must stay on his toes. But he says his organization, which brought service to 8,000 new customers in the boom year of 1956, is geared to meet this challenge.

Ron brings a wealth of experience to his job as 1962 A.M.E.U. president besides 39 years with Scarborough P.U.C. He is a graduate of the University of Toronto in Civil Engineering (hydraulics). After World War I, during which he served as a sapper with the Canadian Engineers, he served two years in Ontario Hydro's Hydraulic Department.

In 1951 he was chairman of the Canadian Section of the American Waterworks Association, and since 1956 he has been chairman of the Electrical Examining Board of the Metropolitan Toronto Licensing Commission. He is also active in service club work.

For recreation he enjoys fishing, curling and keeping the grounds trim around his Birchcliff home in Scarborough. An ardent traveller, he has spent several vacations in the West Indies, visited Cuba before Castro's takeover, and hopes

. . . and the president of the Association of Municipal Electrical Utilities

Ron Harrison



some day to take a cruise up the B.C. coast to Alaska.

But this year he expects to spend a great deal of his time on A.M.E.U. business.

At the many meetings he addresses as A.M.E.U. president, Ron stresses the 1962 theme "Partners in Power." "We mean that to include the o.M.E.A., Ontario Hydro, the A.M.E.U., manufacturers, dealers and contractors," he

(Continued on page 20)

NUCLEAR CONFERENCE REFLECTS INTEREST IN CANADIAN APPROACH

More than 230 delegates, including representatives from the United States, Europe and Asian countries, attended the second annual conference and meeting of the Canadian Nuclear Association, held recently in Ottawa.

The international flavor of the three-day conference reflected the growing interest of other countries in the Cana-



I. F. McRae

dian approach to nuclear power reactors. From the first day it was clear that the heavy water-moderated and cooled, natural uranium-fuelled type of power reactor had captured the attention of foreign nuclear authorities.

"We are now being taken seriously," said Dr. W. B. Lewis, vice-president of Research and Development, Atomic Energy of Canada Ltd., the federal agency which has pioneered development of heavy water reactors. Dr. Lewis' remarks were substantiated

by W. K. Davis, vice-president Bechtel Corporation of the United States. During a panel discussion, he said: "We have become extremely interested in Canada's heavy water moderated power reactor."

Among the many speakers and panelists were N. S. Haines and Dr. R. B. Trewin of Ontario Hydro. Mr. Haines described a series of interesting problems encountered in the design of the structures for the Douglas Point Nuclear Power Station being built near Kincardine by A.E.C.L. Dr. Trewin outlined the method of radiation protection and the safety regulations developed for Ontario Hydro's operating staff at nuclear power stations.

Between sessions delegates were able to view over 100 exhibits in the first international exhibition devoted exclusively to the nuclear industry.

Ian F. McRae, Chairman of the Board, Canadian General Electric Company, was re-elected association president, while Ontario Hydro Commissioner, Hon. Robert W. Macaulay, Minister of Energy Resources and Minister of Economics and Development, continues as vice-president.

RON HARRISON

(Continued from page 19) said. "We are all in this 'big business' together, and all should be playing their part. It is gratifying to know that manufacturers, dealers and contractors are now playing an ever-increasing role in load promotion."

The 1931 annual report of Scarborough P.U.C. paid tribute to Ron Harrison for his "skill, care and foresight" in maintaining services at "maximum efficiency."

That date could well read 1962.

PERCY R. LOCKE

(Continued from page 18) trying to serve and earn their confidence." The great degree of success he has gained over the last 30 years in his insurance business confirms the soundness of his thinking. While he has been no stranger to the 12-hour day, Percy is now able to turn more of his responsibilities over to his son, John, an only child, who has joined him in his business.

One does not chat with Percy Locke very long before being impressed by his deep sincerity, a trait revealed in his attitude towards the great Hydro undertaking. "The people of Ontario are very fortunate in the abundance of natural resources which have been placed at their disposal," he says, "and the responsibility of making the most of them is very real to me—I cannot regard this trust as just another high-flown ideal." Of electric power he has this to say: "No commodity developed by man has done as much for the homes, the farms and the industries of this province."

As a leading citizen of St. Thomas, Percy willingly shoulders a goodly share of civic responsibilities. He has served on the Board of Trade, the Industrial Board, as a past chairman of the Community Chest campaign, and takes a leading role in community, charitable and public welfare fundraising activities. He is a member of the Kiwanis Club, and is active in Masonry, being a Past Master, District Deputy Grand Master, a 32nd degree Scottish Riter and a Shriner. Although a member of

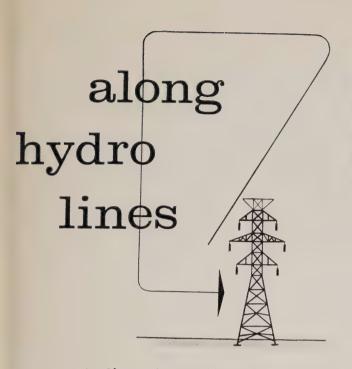
the St. Thomas Curling Club, his business and public service schedule virtually precludes sports and other recreation.

As President of the O.M.E.A., Mr. Locke heads an organization that has provided invaluable guidance to Hydro in Ontario for more than half a century. He has entered into the heavy round of engagements his office entails with evident relish, and before the end of his term he will have participated in public utility functions from one end of the province to the other.

As in the past, he will be there at the opening bell, willing to discuss pensions, insurance and other innumerable subjects of vital interest to Hydro municipalities, long after the last item of business has been written into the minutes.

The Hydro municipalities may look to President Locke and his Executive Officers for sound and responsible leadership on their behalf during his term of office.

Mr. Locke will add lustre to the long list of brilliant personalities who have preceded him in the office of president.



A Champion at Ninety

Ninety years old and still a champion, Mrs. George H. Lidster is this year's recipient of the Ontario Hydro award for excellence in rural news reporting. She was voted champion country correspondent by the Ontario Weekly Newspaper Association at its annual convention held recently in London.



Mrs. Lidster has been a correspondent for the *Dutton Advance* for over 40 years, and this is the second time she has won the award. Shown in the photo, left to right, are: H. C. Campbell, publisher and editor of the *Dutton Advance*; Mrs. Lidster; Werden Leavens, secretary-manager of the o.w.n.a.; and R. J. Smart, Ontario Hydro public relations officer, Western Region, who presented the award.

Research Laboratory Opened

The new laboratory of Ontario Hydro's Research Division, a pioneer for almost half a century in many fields of electrical science and technology, was officially opened recently at the A. W. Manby Service Centre in Etobicoke. Ceremonies were performed by Ontario Hydro Chairman W. Ross Strike and Dr. William Percy Dobson, who guided the Commission's research activities for four decades.

Dr. Dobson, who retired as director of Research



in 1952, used a pair of electric scissors to snip the ribbon. He termed the new laboratory, named in his honor, "a symbol of Hydro's devotion to progress," which would pay huge dividends, and predicted that a great future lay ahead for research within the Hydro organization. About 150 guests, including municipal officials and electrical utility personnel, attended the opening.

This photograph of the ribbon-cutting ceremonies shows Dr. Dobson, center, assisted by Chairman W. Ross Strike, left, and Hugh C. Ross, the present director of Research.

Rate Options Available for Electric Home Heating

Fresh stimulus in the form of more attractive and flexible rates is being offered to Ontario residents who like the many superior features of electric home heating.

At the outset of electric home heating in Ontario, a minimum rate of 1.5 cents net per kilowatt-hour was established. This rate was reduced by 10 per cent to 1.35 cents for the 1961 heating season, and further reductions can now be negotiated.

As a result of rate studies and discussions between Ontario Hydro and the Rates Committee of the A.M.E.U., utilities can now negotiate with the Commission to revise their regular residential rate schedules so as to accommodate electric heating. In this event, the need for a second meter is eliminated.

Through negotiations, too, the cost to the customer for electric heating has been reduced, in a number of instances, by as much as 25 per cent.

The following rate options are now available to the utilities, subject to the approval of Ontario Hydro:

- (a) Where the end rate of the existing residential rate structure is adequate to recover the cost of heating service, all consumption, for heating and for normal use, may be metered through one meter and billed at the regular residential rate. Or the residential rate may be revised to accommodate electric heating.
- (b) The customer's heating service may be retained on a separate meter and an appropriate rate applied for—generally lower than the presently ap-

proved rate of 1.35 cents net per kilowatt-hour for

such energy.

(c) Where electricity is the sole source of energy in the home, including water heating and house heating, a single all-electric rate may be offered for total energy requirements, measured through a single meter.

The electric heating rate for Ontario Hydro's rural customers living in heavily populated suburban areas has also been lowered—from 1.35 cents net per kilowatt-hour to 1.25 cents net per kilowatt-hour. This change applies only in areas where at least 100 customers in a group have a customer density of at least 12 per quarter mile of road or street.

These changes will enable municipal utilities and Ontario Hydro to provide energy for electric home heating at rates which are more competitive with other forms of energy.

44 Years as Superintendent



Retiring after 44 years as superintendent of Forest Public Utilities Commission, G. Stanley Ellerker recalled that, at the time of his appointment in 1918, he was lineman, bookkeeper, meter reader, billing clerk and everything else involved in the P.U.C.'s operation. During his tenure he saw the number of customers grow from 376 to 917, and the power demand rise from 89 kilowatts to 1995 kilowatts.

Aside from his duties with the P.U.C., Mr. Ellerker took a very active part in church work, and he was a member of the Forest High School Board for 10 years.

He has been succeeded as superintendent by A. J. Forbes, who has been with the utility for a number of years.

It is interesting to note that since 1917, when Forest became a Hydro municipality, 19 mayors have been elected, while only seven Hydro commissioners have held office, including the present encumbents, Chairman E. H. Matthews and Commissioner G. C.

Turnbull. Mr. Matthews has been a commissioner since 1939 and chairman since 1949. Commissioner Turnbull also serves as secretary.

Shown in the photo, left to right, are: Mr. Matthews, Mr. Ellerker and A. J. Forbes, the new superintendent.

municipal briefs

Milton Hydro ran into a unique water heating problem recently and knew just how to handle it. It seems that Highway Gospel Church planned a baptism by the complete immersion method and put up a tank capable of holding five tons of water. Their problem was how to obtain water warm enough so that the people to be baptized wouldn't catch pneumonia. Utility Manager O. L. Hadley promptly called in Ontario Hydro's "hot water wagon", which provides this invaluable commodity at various public gatherings as a goodwill gesture. After a series of rapid calculations, the wagon's inventor, Ross King, Central Region Sales, pumped the tank full and the baptisms proceded on schedule in water at a cozy 87 degrees.

Ottawa Hydro was much praised at its annual reception and dinner for highly successful operations during 1961. Commission Chairman J. E. S. Lewis noted that the utility's demand and revenue had doubled since 1952. Load increased by 7.66 per cent over the previous year.

Rainy River P.U.C. plans to convert its distribution system from the present 2,400-volt delta to 4160 star, and provision for the change has been made in the budget.

Sudbury is a hairy-chested community of mine and smelter workers, but it has its aesthetic side. Sudbury Hydro recently gave tentative approval to the local horticultural society's plan to hang wire-mesh flower pots from lamp posts on Durham and Elm streets. It wanted to know who would be responsible if a citizen was layed low by falling geraniums.

Port Arthur is contemplating a 10-year street lighting program expected to cost about \$73,000. To implement the program, the city would be divided into 10 areas and the lighting brought up to modern standards, area by area.

Scarborough P.U.C. is negotiating with a land developer with regard to a 600-home subdivision to be built to Bronze Medallion standards, including electric hot water heating. The homes would be heated with oil. In return, the builder would gain a strong selling tool in the form of a complete under-

ground distribution system. The utility believes such an arrangement in a rapidly developing area would have a marked influence on neighborhood projects of the future.

Home wiring was the topic scheduled for discussion at the June meeting of the Sault Ste. Marie Home Builders Association, but interest was so great in electric home heating that most of the proceedings were devoted to this subject. One panelist predicted a large-scale shift to electric heating within the decade. And Paul Jago, district representative of the Electric Service League, discounted a suggestion that electric home heating was not for rugged northern winters. "Tve found the acceptance of electric heating to be greater in Northern Ontario," he said, "than in Southern or Central Ontario."

Among those utilities which have recently received approval to supply house heating as part of the normal residential service, through a single meter, are: Tillsonburg, Strathroy, Galt, Waterloo, Kapuskasing, Blyth, Erin, Borden, Oil Springs, North Bay, Hespeler, and Capreol. Others which have negotiated lower electric heating rates, while retaining separate meters, include: Sandwich West, Midland, North York, Exeter, Orillia, Owen Sound, Barrie, Trenton, Elmsvale, Coldwater and Glencoe.

Still other municipalities have adopted a special

O.M.E.A. District President Dies In Accident

Alex Hannah, Mayor of Sioux Lookout and president, District 3, o.m.e.a., was killed in an automobile accident, June 22, while returning from Dryden.

Details of the tragedy were not available at press time, but it was understood that Mr. Hannah was travelling alone and that no other vehicles were involved. He was 51 years old.

A former hard rock miner, Mr. Hannah was employed, at the time of his death, as an engineer with the Canadian National Railways. He was a great believer in the future of Sioux Lookout, located some 275 miles northwest of the Lakehead, and was serving his fourth term as mayor.

Mr. Hannah was a member of the Sioux Lookout Hydro-Electric Commission, and had been elected president of District 3, O.M.E.A., at the annual district meeting, held last September in Schreiber.

He is survived by his wife and three daughters.

rate per kilowatt-hour for customers who use electricity exclusively including home heating and water heating. These include Dundas, Port Arthur, Rodney, Warkworth, Courtwright, Smith's Falls, Webbwood, Orono and Wellington.

Personnel Change Announced In Municipal Accounting Field

Ontario Hydro has announced that Mr. Dan Gorrie relinquishes his duties as municipal accounting co-ordinator, June 27, to join the staff of the Financial Reporting Section. He will assume the position of financial reporting officer upon the retirement of C. V. Somers in 1963.

As municipal accounting co-ordinator, Mr. Gorrie worked closely with regional personnel, particularly on financial matters relating to the utilities.

His successor is G. E. Conn, who has had wide experience in the field of municipal accounting and was regional accountant in the Niagara Region prior to amalgamation with the West Central Region.

IN THE LOOKING GLASS

... as others see us

Dear Sir:



It is with great pleasure that we receive Ontario Hydro News every month, we so much enjoy keeping in touch through your magazine.

Enclosed you will find a few clippings from our local paper, *The Sarasota Journal*. Cut from the comic section, these clippings show how the H.E.P.C. has

come into its own at last, it is now being quoted and pictured in the comics south of the border. I thought, after reading in a copy of Hydro News, April, 1962, the article "Line Building from the Air", that you would like to hear how your fame has travelled to the most southern state of the U.S.A. . .

Doug Moffitt, Sarasota, Florida.

Editors Note: Mr. Moffitt, who is now living in Florida, retired from Toronto Hydro in 1958. The comic strip he refers to depicts a helicopter pilot who learned about aerial line-building while on a visit to

Canada. Mr. Moffitt gives us the benefit of the doubt and assumes Ontario Hydro was the source of his knowledge.

Dear Sir:

I have recently read the April edition of Hydro News and have found many interesting topics in it. However, it is noted that, under the heading "Municipal Briefs", you have stated that Galt recently cancelled plans for its first major experiment in under-

ground wiring. We wish to correct this information, since our first major experiment in underground wiring was made two years ago when we supplied underground wiring to a 120-lot subdivision. At present, it is mandatory that all new subdivisions be equipped with underground wiring. The item referred to in Hydro News involved a location in a commercial area of the city where rebuilding of the overhead system was necessary. Because it was in a built-up area, the cost of putting the wiring underground was quite high, and we had requested that a portion of the cost be paid for on a local improvement basis. It was this request that was refused by our Council.

J. F. Rousom, P.Eng., Asst. Manager and Engineer.

Dear Sir:

It was certainly thoughtful of you to send the page proof of your May, 1962, editorial regarding Canadian Electrical Association's underground distribution conference.

I am sure you know of Electrical World's interest in this subject and the several attempts we have made over the years to bring it to the attention of utilities throughout the United States and Canada. We have also had several excellent articles from Canadian authors regarding their experience with underground residential distribution. We are still hoping that somebody will show the industry how to do this so economically that there will no longer be the question of who is going to pay the additional cost. If you find this story, we hope you will bring it to our attention quickly, and we will try to do the same for vou.

Leonard M. Olmsted, Senior Editor. Electrical World.

Ideal School Lighting Previewed

The ultimate in classroom lighting was previewed recently at Unionville Public School by elementary school inspectors and trustees from adjacent school

The optimum level of lighting had been installed in the Grade VIII classroom by the Unionville School



Board, in co-operation with Ontario Hydro. Three continuous rows of suspended, four-lamp commercial fluorescent fixtures provided an average of 150 footcandles of illumination over desk areas, and five four-foot fluorescent lamps illuminated the chalkboards at the front of the classroom.

During the open-house, Grant Davidson of the Illumination Department of Ontario Hydro's Research Division, demonstrated methods of determining lighting levels in classrooms. He discussed reflective qualities of paints and surfaces, how brightness levels are determined, and research which has been carried out in this field.

Shown in the photograph, measuring the level of illumination with a light meter are, left to right: F. G. Dean, Toronto Hydro; W. J. McLeod, public school inspector; and Ron Boulton, Sylvania Electric (Canada) Ltd.



OFF THE WIRES

Even the birds are taking to electric home heating as Mr. and Mrs. Frank Corbin of Windsor can testify. They payed the electric bill for a robin who chose the top of their porch light to



raise a family. Not wishing to disturb their feathered guest, but anxious that she terminate her stay as quickly as possible, the Corbins left the light on day and night to speed the hatching process.

No "birdbrain", this robin must have heard how electricity can lighten household chores. And, had she chosen any other form of heating, the chances are she would have raised an omlette.

Twenty-two years ago the executors of a fund to build a monument to the late Sir Adam Beck were refused the financial support of London city council. It seems that \$200 had been willed by a Mr. R. C. Turner to assist in the erection of a suitable monument to the first chairman of Ontario Hydro.

Meanwhile, the fund has grown, through investment, to some \$374. So whether or not council co-operates, it looks as though time and the regular functioning of our economic system will eventually see to it that

Sir Adam's memory is perpetuated in accordance with Mr. Turner's wishes.

On a recent visit to St. Thomas P.U.C. our match supply ran out, and we reached for a book from a carton conveniently located on the service counter. On the front flap was the following warning: "Don't use these matches for water heaters." The back cover contained this succinct message: "There's no match for flameless automatic electric water heating."

Not worth mentioning, perhaps, except that it does suggest why sharp-thinking utility Manager Bill Underhill is acquiring quite a reputation for the ingenuity of the local Hydro's advertising.

The first electricity to be produced by a nuclear power plant in Canada is now being utilized by the customers of Ontario Hydro. The reactor of the Nuclear Power Demonstration plant at Rolphton went critical in April. The next stage in the commissioning of the plant was to use heat from the reactor to produce steam. Finally, with all

the complex testing completed, the plant operators opened the steam circuits to the turbine, which drives the generator, sending electricity produced from nuclear energy to Ontario users.

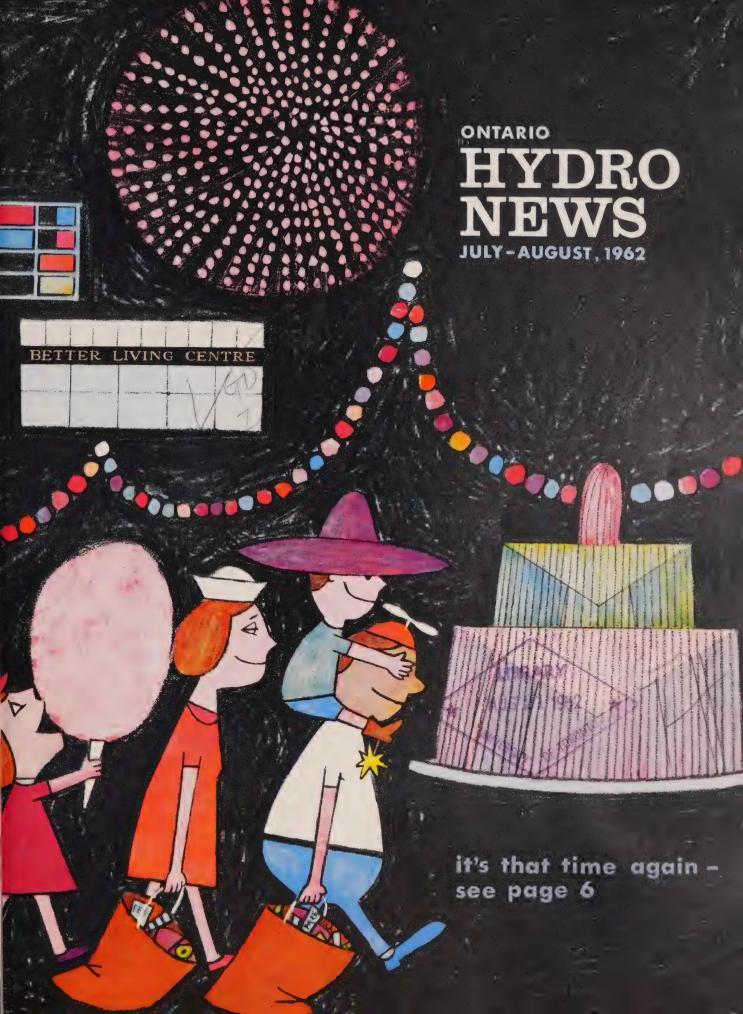
Operating at approximately half capacity at the time of writing, the 10,000 kilowatts or so entering the Hydro system from this source is something less than a drop in the great pool of our power resources. But it is surely significant that the same basic force which terminated World War II in the holocausts of Hiroshima and Nagasaki, is now at work washing our clothes, boiling our tea and cooking our toast. Perhaps it will eventually kindle the lamp of human enlightenment and lead us away from the paths of destruction.

In keeping with tradition concerning the opening of the baseball season, Reliance Electric and Engineering Company sent some of its customers a solemnly worded, black-bordered invitation to attend "grandmothers' day" at Maple Leaf Stadium, Toronto. The invitation indicated that a "spiritual service" would be included.

| The Editor, ONTA 620 University Av Toronto, Ontario | ARIO HYDRO NEWS | |
|---|------------------------|-------------------------|
| My address | is incorrectly listed; | please change it to: |
| NAME | | |
| COMPANY | | |
| STREET and NO. | | |
| TOWN or CITY | | PROV. |
| Please return The Editor. | n this, with your old | or incorrect listing to |

If you wonder where all the mud came from

-follow the footprints to page twelve





The "Ex" Runs on Electricity

Since 1882, when it got its first electric lights, the Canadian National Exhibition has kept multiplying its uses of electricity until now it has become one of Toronto Hydro's top five customers in terms of peak load. The story begins on Page 6 of this issue.



A River Steeped in History

Captain Ernest A. Johnson, 70, former Ottawa riverboat skipper, tells about the busy, pioneering days when "his river" helped maintain Britain's naval supremacy with its brisk 19th Century lumber trade.

The great Ottawa's history is charmingly told in "The Old Man of the River," beginning on Page 13.

JULY - AUGUST, 1962

ONTARIO HYDRO NEWS

CONTENTS

- 2 City Trees And Country Giants
- 4 Hamilton Sets A Good Example
- 6 Ferris Wheels And Kilowatts
- 9 Blackfly Blitz
- 10 A.M.E.U. Summer Conference
- 12 Rehabilitation On The Ottawa
- 13 The Old Man Of The River
- 16 Ours To Ponder
- 19 Lakeview's Role In A Complex System
- 21 Along Hydro Lines

THE COVER

Ontario Hydro News salutes the world's largest annual fair with this whimsical cover by Staff Artist John Elphick. Readers who have visited the Canadian National Exhibition in past years will remember that worn out feeling that comes after a day well-spent at the "ex". New this year, however, is the Better Living Centre where the Hydro exhibit is featured.

THE COMMISSION

W. Ross Strike, Q.C., Chairman; George E Gathercole, First Vice-Chairman; William G Davis, M.P.P., Second Vice-Chairman; Hon Robert W. Macaulay, Q.C., M.P.P., Commissioner; Lt.-Col. A. A. Kennedy, D.S.O., E.D. Commissioner; D. P. Cliff, Commissioner. Ernest B. Easson, B.Com., Secretary.

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Editorial

SMOKESTACKS AND WHITE WATER

When Prime Minister John Robarts and Ontario Hydro Chairman W. Ross Strike pressed the button to officially open the Commission's Lakeview Generating Station, they were also confirming the changing pattern of power production in Ontario. In the future, more new generating capacity will be developed from thermal-electric plants than from the power of falling water.

This is not to say that the hydro-electric potential of the province has been exhausted. Some 2,000,000 kilowatts are estimated to be capable of economic development, mostly in the north, and this power will be harnessed progressively as economics suggest.

It is understandable that the triumph of men and equipment over the violence of our great rivers during the last half century should have captured our imagination. A science which employs great masses of concrete to tame the force of a raging river, and sometimes alters the topography of an entire region, is not difficult for the layman to appreciate.

But if smokestacks and nuclear reactors are to be our new symbols of progress, there may be cause for nostalgia, perhaps, but not for regret. The challenge which lies ahead in the field of thermalelectric generation is just as demanding as that faced by Commission forces at a similar point in the hydro-electric development program.

Tremendous advances are being made in the generation of electric power by coal-burning plants and by nuclear fission. And as the public becomes more familiar with the world of high-pressure steam generators, flashing furnaces, fuel rods and calandria, it will come to realize that the drama is simply shifting to a different theatre. For the plot remains the same — the struggle to produce electric power at the lowest possible cost with the means available — only the setting is changing.

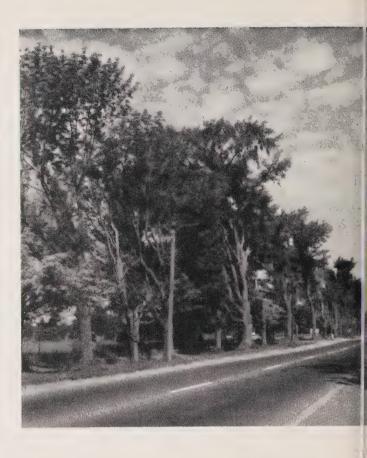
Lakeview G.S. is symbolic because it represents the first major thermal-electric plant conceived, designed and constructed by Ontario Hydro personnel. In only a decade, then, the Commission has developed a team of thermal-electric experts capable of producing a coal-burning plant which is destined to rank well up with the world's great plants.

The new chapter of Hydro history the thermal group has commenced to write seems certain to belong in the same proud volume whose introductory passages were so brilliantly inscribed in terms of hydro-electric development. And system efficiency dictates that the authors proceed with the new sequence while the first continues to be developed, polished and completed.

CITY TREES AND COUNTRY GIANTS

A new concept of tree use is evolving based on the proper selection of species.

Forest giants and power lines don't mix even in a rural setting as this row of trees suggests. The tale of two trees on a city street, depicted below, is reproduced courtesy of the Winsconsin Public Service Corp.





Planting cost \$6.00. Maintenance first tour years \$2.00



Seldom needs spraying.



In harmony with mo overhead wires. Does require severe prunin,





American Elm (Ulmus americana) 8 to 10 feet tall. Size in 40 years, 60 to 65 feet.



Planting cost \$6.00.
Maintenance first four years



Subject to many insect enemies and Dutch Elm Disease.



In conflict with some after 12 to 15 years. It severe pruning.

little-leaf linden

THAT well-spaced, tenderly cared for row of baby trees marching down the neat new suburban street might well be your utility's headache 20 years from now.

The one ambition of most young trees is to grow into the biggest giant on the street — at cross purposes with the people who must hack away at overhanging branches or soaring tops, unclog root-filled sewers or cable ducts, and replace root-heaved sidewalks and roadways.

Realizing that forest giants have no place in the relatively confined quarters of town and city lots, some utilities in Canada and the United States are attempting to educate sub-dividers, municipal parks and road officials, and private home owners in the careful selection of trees.

Behind this seemingly altruistic gesture is a long history of strained relations with irate home owners, civic officials, and the general public as well as hundreds of thousands of dollars worth of unnecessary tree pruning costs.

The tree education programs carried out by utility arborists and foresters take many forms, including talks and lectures before civic and public groups, newspaper and magazine articles, and pamphlets and brochures of varying degrees of elaborateness. In essence, however, the programs urge foresight in the selection of tree species more suitable to the cramped environment of urban lots and streets than the common forest variety.

Most people go along with Joyce Kilmer's immortal words:

"I think that I shall never see,

A poem lovely as a tree."

But how many realize that they can enjoy sylvan urban settings without playing havoc with vital services? And that, through proper selection, their trees need never fall victim to essential but unsightly pruning or topping.

Few things we purchase have a longer useful life than a tree, yet, conversely, we acquire very little with less thought or knowledge. Similarly, we hesitate to consult a reputable nurseryman or spend an extra dollar for something that will be with us a lifetime.

The pattern of tree use, established before, and just after the turn of the century, has persisted until recent years. Trees cheaply gathered in the woods or quickly grown in the nursery were the favorites.

Courtesy Wisconsin Public Service Corp.



And these are the species, mostly forest giants when mature, which are contributing to the dilemma utilities and home owners find themselves in today.

But a new and more useful concept of tree use is evolving. It is entirely practical and involves the selection of functional trees that will not exceed the limits of available space. It advocates the use of many beautiful trees heretofore not used - trees that take various forms, with colorful bark, flowers or foliage.

The new concept presupposes some knowledge of trees and landscaping as well as an understanding of each particular problem. Before an intelligent selection can be made it is necessary to know what a tree, or trees, is expected to do. Is it to be purely ornamental? Provide shade? Act as a screen? Or frame

a view?

It is to make the general public and others associated with urban planning, particularly of new suburban developments, aware of these questions and their solution that forward-thinking utilities are directing their educational programs.

An outstanding example of what can be accomplished is evident in Hamilton, Ontario, where a city arborist has been advocating the use of proper tree species in all new and replacement planting for several years. Details of the Hamilton program are

contained elsewhere on these pages.

And Ontario Hydro has been developing a forestry service of highly-trained specialists for a number of years. These men are being used increasingly to talk to engineers and other municipal personnel on the benefits of tree planting programs compatible with utility operations. A start has also been made in providing, through pamphlets and guides, some of the specialized information required for such programs.

The stakes are great — improved service, better customer relations and savings running into the millions of dollars. A little knowledge and foresight invested now will pay handsome dividends in the

Another factor which may eventually dictate a more enlightened approach to urban tree planning is

Certain of our forest giants, such as the maple, are showing little affinity for civilization. Many thousands of these noble trees are dying of, for want of a better name, Civilization Disease. As yet unidentified, the problem is more severe along heavy traffic arteries, leading to the assumption that exhaust fumes may be partly responsible. Other theories lay the blame to lowering water tables or changing soil temperatures.

In any event, there are attractive trees of a great many varieties admirably suited to life in the city and an educational program is urgently needed in order to make the most of them.



proper size . . .

HE City of Hamilton provide a good example of what can accomplished when a comprehe sive tree planting and care p. gram is undertaken by a munipality.

Throughout the city, consider by many to have the most bear ful natural setting in North America, results of the tree p gram, started only a decade a are already becoming apparent

Thousands of trees, prope oriented to their surroundir. have been planted by the Beat! fication Section of the Streets a Sanitation Department. This tion co-ordinates and performs tree work of the various utiling and municipal service depart ments. For example, through agreement with Hamilton Hyd the section handles all tree pri ing necessitated by overhead wis

Much of the success of the pr gram can be attributed to persistent efforts of former (Arborist Gordon McNair, v left his municipal post recent for private business. It is a trib of to his work, and to the enlight ened attitude of Street Comr sioner William Muirhead and city fathers, that no time was in appointing a successor. He Harry Rumble, who began career with the Forestry Dep ! ment of Ontario Hydro.

Asked to enumerate some of





and placement

These Hamilton plantings illustrate three vital considerations in tree selection, From left, the species are: little-leaf linden, globe locust and cut-leaf birch.

Trees are a matter of pride and planning in the Ambitious City.

SETS A GOOD EXAMPLE

st important facets of Hamila's policy with regard to tree e and planting, Mr. Rumble ed the following procedures:

(1) Each tree removed is reced with two trees of a species table to the particular location. (2) Sub-dividers are required plant at least one tree for every foot road frontage in accordance h a master planting plan. They y do it themselves or have the do the planting at a standard

(3) A continuing spraying prom is maintained to protect inst such scourges as Dutch n disease.

4) Systematic pruning is carried , not only to maintain utility e clearance, but also to help est the spread of disease and ects.

(5) Arbor Days have been rered in the Primary Schools. or those of us old enough to ember, Arbor Day was a

ing term highlight when, for privilege of skipping an afteron of studies, we worked like vers to clean the school yard of winter accumulation of debris, to plant flowers and trees.

Vith the modern janitorial sers now available, Arbor Day has ome only a memory in many nicipalities but, in Hamilton, now takes the form of a tree nting ceremony. In addition to

teaching youngsters the value of trees, this approach has cut the incidence of tree vandalism to the vanishing point and, according to Harry Rumble, it is one of the most encouraging aspects of the Hamilton program.

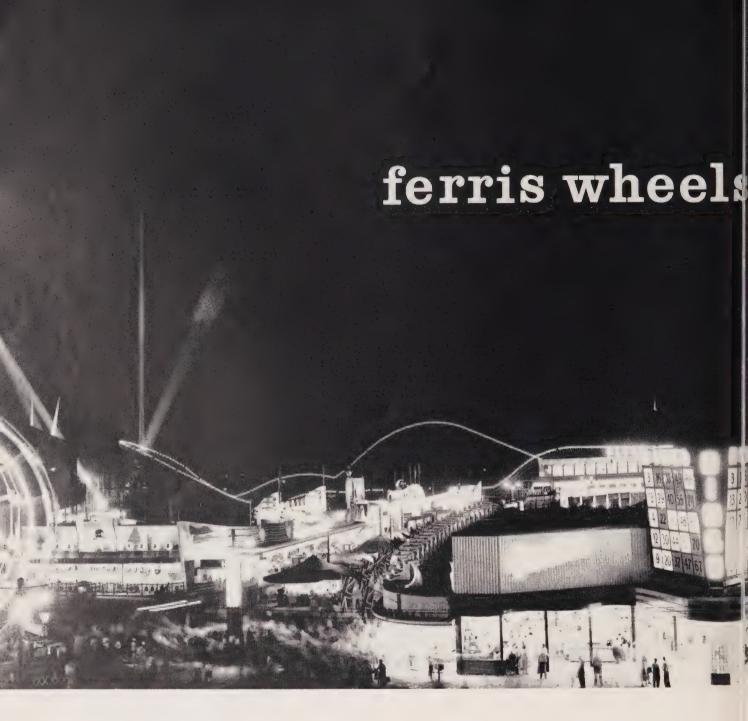
He is also quick to point out that the removal of overhead wiring does not solve all urban tree problems since the root systems of some trees are just as extensive as the branches. He cites the case of a new Hamilton subdivision as an indication of the new problems created by underground distribution. In this instance, in spite of generous setbacks, only two, three-foot-wide strips were available for tree planting. To prevent damage to the services, special species of small-rooted trees were required.

Where at all possible, narrow boulevard planting is avoided in Hamilton since snow removal and trucks with projecting bodies are extremely hard on trees in this strip. Instead, the majority of the trees are planted close to private property and maintained by the city.

In the years to come, Hamilton citizens will reap the benefit of this far-sighted program, both aesthetically, and from the point of view of utility costs, which have a way of showing up in electrical



Hamilton's enlightened tree policy saves money and will endow city streets with permanent beauty. Photo shows City Arborist Harry Rumble, right, and Street Commissioner William Muirhead inspecting infected globe locust.



An exhibition without electricity?

"Impossible," says Clayton Swegler, the man behind the switch at Toronto's Canadian National Exhibition Park.

As C.N.E. electrical engineer, he masterminds an electrical system almost as large as that in some cities.

And it is doubling its load every ten years.

and kilowatts

Visitors to the 1962 edition of the Canadian National Exhibition will find more changes than in any year since operation was resumed following the war.

And all the changes are not on the surface, for in addition to a new building, the Better Living Centre, and major renovations to the Coliseum and old Electrical Building, equally important changes have been taking place behind the scenes. More than ever before, electricity will be among the big fair's top performers.

Throughout the buildings and grounds the electricians of the CNE have been boosting the capacity of the electrical system, replacing transformers, and installing more outlets for power hungry displays almost since the close of the 1961 Exhibition last Labor Day.

Since 1882 when the first electric lights were installed at the CNE, then a toddling three-year-old, the exhibition has kept multiplying its uses of electricity; until now it is one of Toronto Hydro System's top five customers from the point of new peak load.

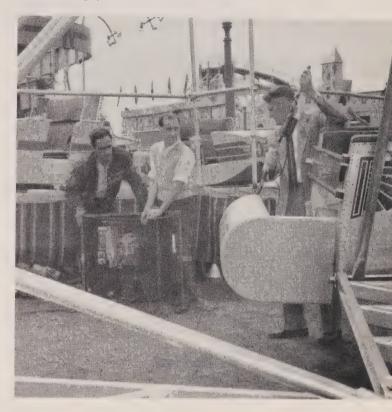
Its 10,000 kilowatts of peak load equals that of the Town of Weston, which serves a population of over 9,400 including some 3,300 domestic customers, 40 industrial and 360 commercial customers.

To supply this load, some 50 transformer banks have been installed at the CNE in the 450-600 kva range. Primary distribution is at 4,160 volts through underground duct, one of the first underground installations in Toronto, initiated over 40 years ago.

The new Better Living Centre, for instance, has nine transformers ranging in capacity from 600 to 1000 kva, to handle both the permanent and display load of the building.

One of the largest structures on the grounds, it provides over 210,000 square feet of display space. To keep the air fresh, 42 fans are used, which are capable of circulating a million cubic feet of air a minute. Inside lighting is all fluorescent, consisting of over six miles of tube in more than 2,000 fixtures. An additional 600 eight-foot fixtures provide exterior lighting.

But to youngsters, from two to eighty-two, the Canadian National Exhibition means the midway, and it is here in a nine-acre strip that electricity proIt's safety-first in spite of frenzy preceding opening day. Here, area Electrical Inspector Harry Williams, Central Region, checks amusement ride for grounding. Hydro inspectors maintain office on grounds prior to, and during, fair.



vides the backdrop and muscle for the whoop-la of the world's largest outdoor show.

To maintain the proper carnival atmosphere, the 58 attractions of the Conklin Shows require a whopping 15,000 kilowatts of connected load. An indication of its size is the fact that the Conklin Brothers, who have the outdoor concessions at the Seattle World's Fair, have only 19 attractions there, and the gross in one good day at Toronto is equal to a good week at Seattle.

The largest single midway attraction at Toronto is the Flyer, claimed to be the fastest roller coaster



Like much of the "Ex", this huge sign over International Shoppers' Market, is outlined in electricity. New this year, market offers goods from around the world.

in the world. It does haul the heaviest train, powered by a 150 hp electric motor.

And for the ferris-wheel enthusiasts, this year's "Ex" will feature the world's largest — a 240-passenger, 105-foot-high monster which, with its 40-hp main motor and auxiliaries, as well as thousands of incandescent lights, itself represents a bigger electrical load than many municipal commercial customers.

Even the grandstand show relies heavily on electricity for its spectaculars, and lighting is supplied by over 300 white and colored spots controlled through switches mounted in two consoles. To present the grandstand show and still make use of the stadium, the CNE has constructed the world's largest movable stage. Mounted on ten electrically-powered caterpillar tractors, the stage is remotely controlled and the power supplied by trailing power cables.

In recent years, other activities at the CNE park have become, in total, even larger users of electricity than the Ex itself. Consumption during the two-week Exhibition last year exceeded three million kilowatt-hours. However, the load throughout the rest of the year doubles that. Football, motor shows, trade fairs, and dozens of other activities have made the CNE park a year-'round attraction for Torontonians.

Night football games in the Exhibition Stadium require 1,800 kilowatts for field lighting alone. And most of the indoor shows held in the huge Coliseum complex put a greater strain on its electrical system, which has been rebuilt in the past two years, than does the Exhibition.

Looking to the future, plans are now being discussed to triple the capacity of the grounds' primary distribution system over the next ten years. And if electricity is to continue as the brightest star in the greatest show on earth — such plans will need to be implemented.

HYDRO AT THE C.N.E.

ONTARIO Hydro is celebrating its 50th anniversary at the Canadian National Exhibition with outstanding displays in a brand new location — the ultramodern "Better Living Centre" on the site of the former Manufacturers' Building.

Work on the 7,500 square feet of ingenious display commenced last fall and the results contrast strongly with Hydro's debut at the "Ex" in 1912. Quality is the only remaining similarity — the 1,800-square-foot exhibit unveiled 50 years ago in the "Process Building" having been awarded a gold medal for excellence.

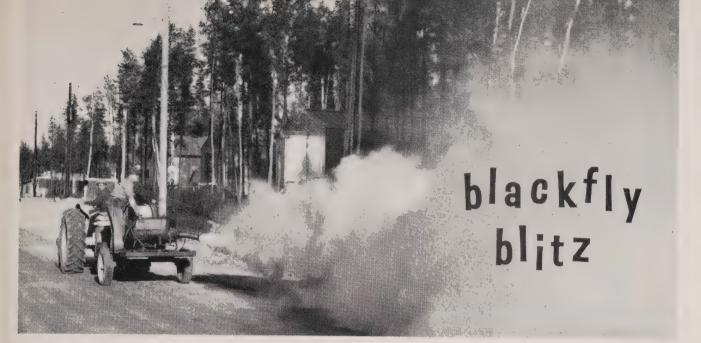
One of this year's outstanding displays tells the story of light and heat in a series of five handsome tableaux spanning progress from prehistoric times. It terminates in a Gold Medallion Home exhibit featuring the ultimate in present day electrical living.

A second fascinating display illustrates the rain cycle — a dramatic portrayal of the raindrop's role in power production.

In the same general area of the Better Living Centre, Toronto Hydro has a dynamic display designed to acquaint its customers with the many services available from their utility. Emphasis is on air-conditioning, electric home heating, good lighting, water heater service and the wiring and appliance finance plan.

Also well worth a visit is a nearby display by the Electric Heating Association.

Ontario's veterinarians have taken over the old Hydro Building to present the latest techniques in animal and pet care.



Rolling through the construction colonies twice daily at height of fly season, this sprayer knocks out insects which escaped spring aerial blitz.

The little flies
with the big appetites
find lean pickings
at Little Long.

CANADA's vast and untamed northland may be settled some day but before it is science will have to come up with the answers to some pretty tough problems. Among them: how to clear the north, cheaply and effectively, of its summertime blackfly plague.

At the present time, these fiendish little pests have things pretty much their own way — with the important exception of a few isolated outposts like Ontario Hydro's electric power developments.

A solution to the blackfly problem, purely on a limited area scale, was more or less demanded of the Commission when it began its great northern development program after the war. For without some control of the blackfly population at construction sites work would have been handicapped and life, in general, pretty miserable.

The Little Long Rapids project, 42 miles north of Kapuskasing, is well into blackfly country and a good example of successful pest control. Thanks to the measures employed last year and again this summer, not many blackflies survive to annoy Hydro workers or their wives and children living at Little Long.

A program of control, developed jointly by the Research and Construction Divisions and applied first at Cameron Falls, is proving eminently satisfactory at Little Long.

Early in June this year an aircraft laid a fine spray of DDT base in a petroleum solvent over creeks within a five-mile radius of the camp colony. To determine the best time for aerial spraying, small metal cones were placed in Adam and Waboose Creeks. Painted white, the cones made easy the identification of the blackfly larvae — hatched when the water reaches a favorable temperature.

The larvae tend to stick to anything in fast flowing water so the cones were placed at the outlet of beaver dams or in a rapids section.

Spraying began when both types of blackfly larvae found at Little Long were on the cones. Unlike mosquitos, blackflies do not hatch in stagnant water.

And to knock out the survivors a portable aerosol insecticide sprayer is trundled regularly through the Little Long colony for the duration of the fly season. It sends out a deadly fog of the same mixture used from the air. The spray settles in a fine covering on grass, plants and the low parts of trees, effectively knocking out the blackflies.

It deals also with air-borne pests carried into the Little Long area by the wind. Interestingly enough, blackflies of their own volition don't travel far. They stick largely to one area, hovering in the air, mating and watching for victims.

The aerosol sprayer is used as often as necessary, sometimes, in the height of the season — June and July mainly — twice a day. And the spray is equally discouraging to ferocious northern mosquitos with designs on camp personnel

It does the job, simply and effectively, and to the relief of the folk at Little Long, the colony is now generally free of attack from the air.



This trio of A.M.E.U. delegates, touring N.R.C.'s Aeronautical Establishment, heard Ray Rangi, Sikh aero-dynamicist, describe new wind tunnel. From left are: D. M. Seath, Stratford; T. W. Houtby, Welland; Mr. Rangi and A.M.E.U. President Ron Harrison, Scarborough.



Conference delegates, above, examine giant impulse generator during tour of N.R.C.'s Radio and Electrical Engineering Lab. Key speakers on marketing panel, lower photo, from left are: Harry Foster, advertising executive; J. Herbert Smith, C.G.E. president; J. W. Hammond, Hamilton Hydro; and A. V. Crate, Ontario Hydro.



Management Conference Attended by 380 Ontario Municipal Delegates

OTTAWA'S Chateau Laurier was headquarters this year for a highly successful A.M.E.U. Summer Conference Designed for Management.

The majority of the 380 or more delegates were management and senior engineering representatives of some 175 Ontario electrical utilities, who enthusiastically endorsed the continued high standard of information provided during these annual two-day gatherings.

Reflecting the growing interest and participation of electrical utilities in active sales and loadbuilding programs was the heavy attendance of delegates at a conference session devoted to discussions of marketing and advertising.

Principal speakers were J. Herbert Smith, president, Canadian General Electric Company Ltd., who graphically portrayed "The Marketing Challenges of the 60s"; and Harry E. Foster, Toronto advertising executive, who provided delegates with an illustrated presentation on the role of advertising as a support for utility marketing programs.

Another session dealt exclusively with the responsibilities of utility systems in the field of standards. E. F. Burbank, Toronto Hydro, took the podium at this session to introduce a panel of experts representing the Co-ordinating Committee for Electrical Utility Standards. Mr. Burbank is chairman



A study in concentration — these four delegates to the A.M.E.U. Summer Conference are all ears.

of the committee and of the A.M.E.U. Engineering Board.

Delegates listened with interest to papers on various aspects of the standards problem by L. B. Stirling, Shawinigan Water and Power Company; G. S. Duffus, Canadian Westinghouse Company, Ltd.; F. L. G. Askwith, Ottawa Hydro; and F. A. Sweet, Canadian Standards Association.

Conducted tours of the National Research Council's Radio and Electrical Engineering Building, and of the Aeronautical Establishment, with a series of lectures by senior N.R.C. officials, were another conference highlight.



Field Safety Supervisor C. W. Dukelow, Electrical Utilities Safety Association, shows delegates how dummy "Resusci-anne" is used in safety demonstrations. Looking on are C. W. King, Dresden (centre) and D. D. MacKenzie, Riverside.



This recent photograph shows Hydro Quebec's Carillon project, near Hawkesbury, with construction about 85 per cent complete.

REHABILITATION ON THE OTTAWA

Carillon, Hydro Quebec's power project on the Ottawa River, 12 miles downstream from Hawkesbury, is scheduled for operation this fall. It will eventually provide 600,000 kilowatts and is being developed under the terms of a 1943 agreement between Ontario and Quebec.

Early in its post-war expansion program, Ontario Hydro carried out the Otto Holden. Chenaux and Des Joachims developments, all of which flooded land on the Quebec side of the River. In each case, Quebec leased land to Ontario for the headpond area. Ontario Hydro, acting as agent for the Crown, is now discharging its obligations under the agreement, in the Hawkesbury district.

For the last three years Ontario Hydro has been engaged in a relocation program, on behalf of Hydro Quebec, involving acquisition of property, house moving, land clearing and construction of new sewage and water systems in areas to be affected by the flooding.

The end of the program is now in sight. When the waters reach operating level this fall, all the major work in Hawkesbury will have been finished, leaving only clean-up jobs to be completed.

Hydro Chairman W. Ross Strike and Mayor Albert R. Cadieux of Hawkesbury unveil a plaque on town's new pumping station. Ceremony heralds end of relocation work.



Relocation program involved moving 10 houses such as this. These, and other acquired by Ontario Hydro, have been rented to the people of Hawkesbury



"Slashers" are now about finished clearing some 3,000 acres of wooded land along the banks of the Ottawa in preparation for flooding.



As you read this, the waters of the Ottawa River
are slowly inching up to form the headpond
for Quebec Hydro's Carillon power development. The rising levels
will swallow up three centuries of lusty history
on the lower Ottawa. In this article, Hydro News sketches the highlights of the River
in a talk with one of the old-time riverboat captains.

the old man of the river





Capt. Ernest A. Johnson has witnessed the changing scene since the lower Ottawa was a bustling commercial artery. His father knew the side-wheeler, Empress, shown on preceding page, which plied between Ottawa and Grenville — complete with orchestra and dining room.

No disrespect, Cap'n, but you're the Old Man of the River.

As you say yourself, "if you're a captain—whether 25 or 70 years old—you're the Old Man."

Capt. Ernest A. Johnson, 70, Master Mariner (retired), Sheriff of the United Counties of Prescott and Russell (retired), farmer (retired), and lobbyist for the beauty of the Ottawa River (very much unretired), is—to the best of our knowledge—the only lower Ottawa riverboat captain of his era left.

His day on the great river is past now—he hasn't navigated the Ottawa for nearly 35 years. But in his memory lies the heyday of river transportation on this fabulous stream—steeped in the history of Canada.

Capt. Johnson, a spry gentleman of the river, likes to relive some of the sweet successes, as well as the trials, of riverboat life on the Ottawa.

Today it is a lonely river, compared with the bustle of half a century ago when river traffic busily plied between Montreal and Ottawa, and even further upstream. These were the days when Capt. Johnson, his father and his brother owned and navigated four steamers up and down the river.

They were dangerous days, when to reach your destination you had to shoot the Lachine Rapids.

"It meant a trip through rough, rushing waters with rocks jutting out, ready to trap you the moment you became unwary. It required a steady hand, a calm eye and plenty of nerve—as well as a knowledge of the channel like the back of your hand."

And as the captain says, you couldn't make the trip without the echoes of earlier Canadian heroes



The road that leads to nowhere is on Quebec side of river. Group of buildings, isolated by rising water, was razed by fire. Hydro Quebec's Carillon project will affect levels upstream to Ottawa.

sounding in your ears. For the Ottawa holds the secrets of the first explorers and traders, and has seen the gradual development of Canada into a nation.

When you set out from Montreal, you follow in the wake of Samuel de Champlain, explorer, trader, soldier, patriot of France, and the first white man to navigate the Ottawa River.

You marvel at the courage of Jean de Bréboeuf and other priests of his kind who travelled the Ottawa River route to the growing Huron mission field.

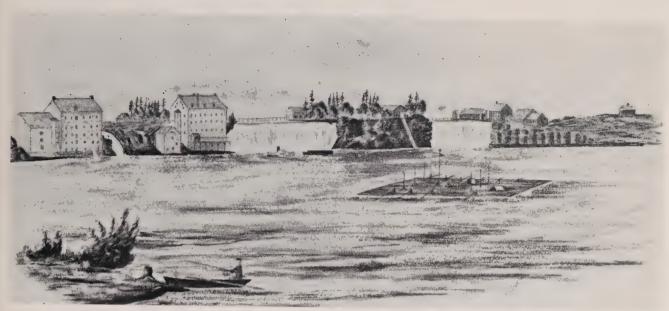
You pass by the Ile Perseverance, the last stop before those early pioneers faced the terrors of mounting the treacherous Long Sault rapids, almost as savage as their namesake on the St. Lawrence River which disappeared with the development of the Robert H. Saunders-St. Lawrence station.

It was near this island, some 30 miles upstream from Montreal, that Adam Dollard des Ormeaux and his small band of 16 French companions, together with a handful of Indians led by the Huron chief, Anahotaha, and the Algonquin chief, Mitiwemmey, fought their famous battle against a legendary 5,000 Iroquois.

Even the site of the battle is lost in legend. Some historians believe it was fought at Carillon, on the Quebec side of the river. Others say they have evidence it took place on the Ross-Lavigne farm, about four miles east of Hawkesbury on the Ontario shore. No one knows the exact site of the last stand, and it has been a controversy in academic circles for many years.

The Dollard controversy points up the Ottawa as Canada's most historic river. Every chapter of Canada's early history refers to the river. Indians, trappers, voyageurs, soldiers, and settlers all used this vital waterway.

Its shores are loaded with artifacts of earlier ages. Bones, weapons, utensils, and many other signs of life



Ottawa citizens would be hard-pressed to recognize this view of the Capital from the Quebec shore. Water color by W. A. Austin depicts square timber raft passing down stream where Rideau tumbles into the Ottawa River.

have been unearthed by amateur and professional archeologists.

All these will go now, with the rising of the Ottawa. Champlain's ghost wouldn't recognize the shoreline today. And to men like Capt. Johnson, the new water levels will wipe out many nostalgic landmarks.

"I used to be able to look out from this spot," he said, standing on the remains of the old wharf at L'Orignal, his home town, "and see the dock stretching a quarter of a mile out into the river. L'Orignal is a village about half-way between Montreal and Ottawa.

"Passengers used to disembark here on their way to Caledonia Springs, famous for its baths for those troubled with rheumatism and arthritis.

"Thousands of tons of hay were loaded at L'Orignal," says Capt. Johnson. "Cattle night, when livestock was loaded, provided a lot of excitement for the visitors who crowded the dock to see bawling cattle, squealing pigs and nervous sheep."

At the end of the wharf, you could see huge square timber rafts floating downstream. Exporting timber to England was the major industry along the Ottawa in the 19th century and the timber — used for masts, spars and other shipbuilding materials — did much to maintain Britain's naval supremacy during this period.

"The square timber rafts looked like villages on water," says Capt. Johnson. "They carried large crews who lived in little huts sprinkled about the rafts. They were completely self-contained."

Hawkesbury, where Ontario Hydro has been involved for the last three years in the rehabilitation program necessitated by Hydro Quebec's Carillon project, was a centre of the timber industry in that era.

It was an industry born of necessity. At the beginning of the 19th century Napoleon had sealed Britain off from trade with European ports. Supplies of timber, normally sought from Norway and the Baltic, had to make the long haul across the Atlantic from Canada.

The heavily-wooded Ottawa Valley was a great source of supply for Britain, and with the help of the British Government the timber industry was established along the river.

And the echo of those early square timber rafts lingers on in the tradition of crib craftsmanship in the Hawkesbury area. It's a family heirloom, handed down from father to son, and you'll find that many of the men who build the cofferdam cribs at Ontario Hydro's power developments come from the Ottawa Valley.

The busy, pioneering days of the Ottawa are gone now. When the river reaches the operating level for the Carillon power plant, it will have changed beyond recognition. A panoramic lake will stretch 70 miles from Carillon to Ottawa.

Yachtsmen will have to pass only one lock instead of the previous seven.

"We all hope the new lake will let bigger boats move up and down the Ottawa, but there's definitely no possibility of establishing a worthwhile business undertaking," says Capt. Johnson. "The big fellows just can't come up."

To the captain, the lower Ottawa is now the "lonely river".

OURS TO PONDER

SAN JUAN, PUERTO RICO—Ontario Hydro received a special public relations achievement award at the American Public Power Association's conference here, May 15, for its motivational research program based on the film "Yours to Command".

The award was won in competition with North American utilities having annual electric revenues exceeding \$5,000,000.

Sometimes a news report, like this one from Puerto Rico, hides more than it reveals. The average reader in the Hydro family will feel a touch of pride at the achievement mentioned above, but his deeper feelings, those which the motivational research program is designed to plumb, are more adequately revealed in the "viewpointer" questionnaires which were distributed at more than 300 showings of the film before Ontario Hydro and municipal utility personnel.

Take the case of the North York meter reader. He's probably not too concerned with film awards, but he did want to know the best way to soothe a snarling dog. He's one of about 6,000 Hydro employees who have seen "Yours to Command", and while his problem certainly has teeth in it, other comments were more enlightening. Together, they are providing management with what it wanted—guide posts for a broad plan to weld Ontario Hydro employees, and those working for the 350 municipal utilities, into an alert group dedicated to the single purpose of serving some 6,000,000 electrical consumers in the province, effectively and economically.

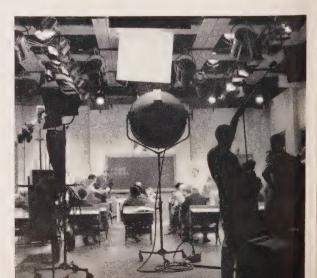
That is why "Yours to Command" won the U.S. honors—not for any dramatic or artistic merit it may have had. The award signified A.P.P.A. approval of the way in which a problem in employee communication had been recognized and the solution sought in a forthright and imaginative manner.

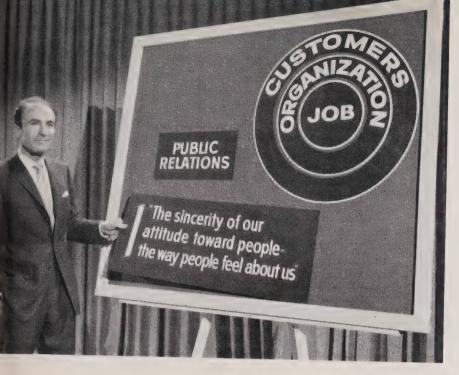
The viewpointer cards issued at each showing, asked viewers a set of questions about their role in public relations, and sought comment about the film.

Reaction to the film "Yours to Command" is providing a valuable guide to employee communications within Ontario Hydro and the municipal electrical utilities.



"Yours to Command" has drama, as the top scene illustrates, but it won the award as an imaginative approach to a problem in employee relations. Lower photo recalls film's setting — a ratepayer's meeting.





Actor Barry Morse warms up his audience in a 10-minute prologue to film, inviting audience participation. Their reaction is now suggesting means to improve employee communications

More than 93 per cent said they found the meetings informative and indicated they would like to attend other meetings on public relations.

Reaction is still being evaluated, but, reduced to essentials, it reveals an almost universal plea for more information about Hydro in general. Biggest eye-opener was the large number who said they did not clearly understand the relationship between Ontario Hydro and the municipal utilities.

But the replies covered a wide range of Hydro activities and indicated that the film has whetted

appetites for more information.

Ontario Hydro has already started a follow-up program based on viewpointer reaction. A first step to clarify the relationship between Ontario Hydro and the municipal utilities has been made in the film "Highlights of 1961," which is now being shown to utility staffs throughout the province.

Another follow-up step involves the Public Relations Guidebook, prepared by Ontario Hydro at the request of the Association of Municipal Electrical Utilities, which has been distributed for use by the utilities. Supplements to the Guidebook, dealing with specific areas, such as "P.R. On The Telephone", "P.R. In the Office" and "P.R. In the Field" have also been made available to assist utilities in staff training.

"Yours to Command" clearly indicates that there is a job to be done for, in the words of Abel Mack, retired "Hydro" man and star of the film: "In all the years I worked for the municipal Hydro here, I never realized so many knew so little about so much affecting their very lives."

they want the facts

These themes recurred most frequently on the viewpointer questionnaires distributed during the presentation of the film "Yours to Command". They suggest areas where Ontario Hydro and municipal utility personnel seek information to help them do a better job.

- 1. Nature of relationship between Ontario Hydro and the municipal electrical utilities.
 - 2. Hydro financing.
- 3. Techniques of handling irate customers.
- 4. Rates how they compare with those charged by other utilities.
 - 5. "Power at cost" concept.
- 6. Specific information on Hydro projects.
 - 7. Hydro's historical background.
- 8. Policy with regard to the help Hydro people are expected to give in emergencies.
- 9. Information relating to line easements and expropriation.
- 10. Improved information service to sales staffs.

CEREMONIES OPEN LAKEVIEW G.S.

First major thermal-electric plant designed and built by Ontario Hydro forces

A SPONTANEOUS round of applause swept through the large gathering at Lakeview G.S. as Ontario Prime Minister John Robarts and Ontario Hydro Chairman W. Ross Strike pushed a button to officially open the giant new thermal-electric plant on the western outskirts of Metropolitan Toronto.

The sound of the big 300,000-kilowatt unit rose to a crescendo over the loud speakers and as the generator approached full revolutions, lights on the electrical backdrop glowed brightly. Just as they reached full intensity, the sun burst forth from behind the clouds which had threatened rain all day—adding a celestial touch no amount of staging could have equalled.

Prime Minister Robarts described the plant as a tangible expression of confidence in the contribution electricity would make to the continued growth and well-being of the citizens of Ontario.

Ontario Hydro Chairman Ross Strike reviewed the Commission's progress in the field of thermal generation and noted that sites had been acquired at Clarkson, some seven miles west of Lakeview, and at Frenchman's Bay, on Metro's eastern outskirts. He said they would probably be developed when the full potential of the Lakeview site had been realized.

The Chairman pointed to the plant's towering smoke stack, its elaborate dust collection equipment, pleasing architecture and landscaping, and the neat condition of its coal piles as tangible evidence of Ontario Hydro's deter-



Happy smiles herald advent of important new power source as Prime Minister John Robarts, left, and Ontario Hydro Chairman W. Ross Strike officially open Lakeview G.S.



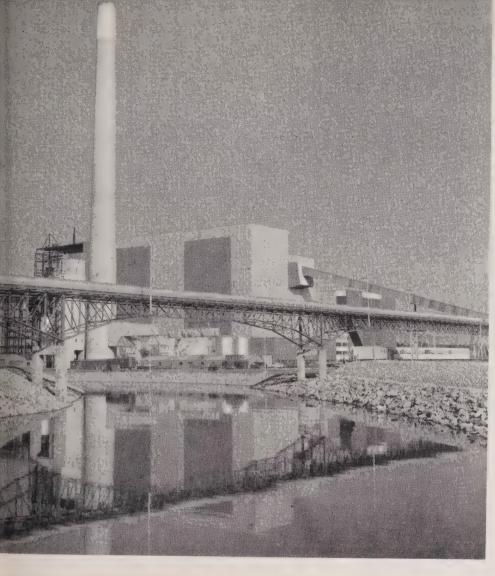
This plaque was unveiled at the Lakeview G.S. opening ceremonies by Prime Minister John Robarts, left, It pays tribute to spirit of co-operation which prevailed during construction. Looking on are Hydro Chairman W. Ross Strike and R. G. Hill, Chairman, Allied Construction Council.

mination to be a good neighbor to the communities in which power developments are established.

The ceremonies, attended by Toronto Township officials, representatives of the Ontario Municipal Electric Association, the Association of Municipal Electrical Utilities, contractors, labor leaders and executives of Ontario Hydro, included a tribute to the labor-

management harmony which has marked construction of the new station.

Work is now well advanced on the second 300,000 kilowatt unit at Lakeview, which is expected to be in service by the end of the year. It is planned to add four other units, giving the station an ultimate capacity of 1,800,000 kilowatts.



Impressive from any angle, Lakeview G.S. reflects to the credit of strong thermalelectric team built up by Ontario Hydro.

LAKEVIEW'S ROLE IN A COMPLEX SYSTEM

Equipped with experience gained through association with outside engineering firms during the construction of the Richard L. Hearn Generating Station and the J. Clark Keith plant, Ontario Hydro's thermal generating department has come of age with Lakeview G.S.

It marks the first major thermal-electric project conceived, designed and built by Ontario Hydro's own engineering and construction forces.

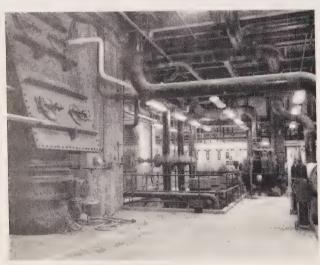
Unlike similar thermal-electric plants, R. L. Hearn and now Lakeview are operating as peaking plants, whereas most of their counterparts throughout the world operate on a 24-hour-a-day basis.

Faced with a peculiar operating situation — to provide peaking power to supplement vast hydroelectric generation — it was necessary for the thermal engineers to develop high-capacity, high-efficiency plants which could be shut down and started up at will.

In addition to meeting peak requirements, these plants, over a period of years, must be capable of picking up an increasing percentage of the base load in Ontario's expanding system. This necessitated the You can't choose a steam-plant from the catalogue and Lakeview G.S. is tailor-made to system requirements



Spic and span, inside and out, Lakeview G.S. refutes public's association of grime with a coal-burning operation. Photograph shows unit No. 1 with second unit, background, in course of erection.



Good housekeeping extends to all areas of the Lakeview plant. This view of the ground floor (there is no basement) shows unit No. 1 condenser, auxiliary switch gear and vacuum pump.

construction of plants capable of producing kilowatthours at the lowest possible fuel cost.

The science of metallurgy also enters the picture. Perhaps the greatest single obstacle in the world-wide pursuit of more efficient steam generating units is lack of a metal capable of withstanding high temperatures over a long period of years.

Although metals have been developed that can withstand super-critical heats developed by such power applications as rocketry and jet aircraft engines, their life is often measured in hours rather than decades as with thermal generating units. And economics also have an important role to play in the construction of thermal plants, limiting the range of metals that it is feasible to use.

These economic and physical considerations are particularly vital in the construction of plants built for peaking purposes such as R. L. Hearn and Lakeview. Added precautions and techniques in metallurgy, fabrication and installation were absolute necessities to enable the boilers, headers, turbo-generators, and other components involved to withstand the extremes of temperatures encountered in repeated starting and stopping of units.

An example was the lowering of steam temperatures at the turbine inlets at both plants to 1,000 degrees, whereas the most common temperatures for modern plants of this size are somewhat higher.

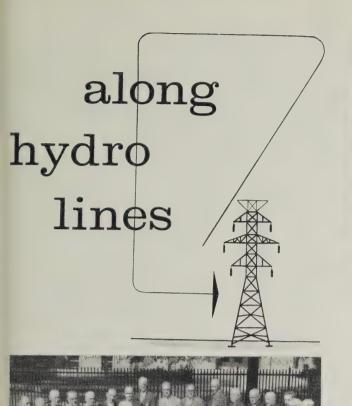
Increased efficiency was obtained at Lakeview (38 per cent compared to 35 per cent at Hearn) by the use of higher pressures, larger units, and lower vacuum at the exhaust end of the cycle, allowing more power to be extracted from each pound of steam.

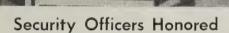
Although Ontario Hydro is a relative newcomer to the thermal field, many advanced designs in the past decade have been tested and proved at its R. L. Hearn and Lakeview plants — where the first 100,000; 200,000; and 300,000-kilowatt units in the British Commonwealth were brought into service.

For the immediate future it would seem that any increase in efficiency over the Lakeview station would come through the use of larger units — initially in the 500,000-kilowatt range.

Their use, however, is dictated by system requirements. If load growth continues at the pace experienced in the past, doubling every 11 years, it is likely that the system will be able to utilize units up to 500,000 kilowatts, particularly since this growth is likely to be accompanied by a reduction in the amount of power purchased from outside sources.

But whether or not the larger units are eventually used, Ontario Hydro thermal engineers will play an increasingly important role in providing for the future power requirements of the province. They will be carrying on a proud tradition of progress established by the Commission's hydraulic engineers over half a century.





Twenty members of Ontario Hydro's Security Division, representing a combined record of over 700 years of police and military service in various parts of the world, were recently honored with silver service medals awarded by the Canadian Association of Police Chiefs.

The medal symbolizes a minimum of 20 years of continuous police service in Canada. A small maple leaf worn on the bar of the medal is awarded for each additional five years of service. Medal recipients came to Toronto from various parts of the province for the ceremonies. Ontario Hydro Chairman W. Ross Strike is shown in the photograph with J. M. Hambley, General Manager and C. B. C. Scott, A.G.M.—Personnel presenting a medal to H. E. Bartlett, Niagara Region, who has 40 years of police service to his credit.

D. F. Robinson, the Commission's director of Security, is, himself, a former police chief with a record of 46 years of continuous police and military service in Britain, Ireland, Europe, the Far East and Middle East, as well as in Canada.



University of Waterloo Holds First Engineering Convocation

A group of pioneering university students who, five years ago, gambled that a new university could successfully carry through a different concept in higher education, received their degrees last month.

These were the students who were among the first to enrol in the University of Waterloo's cooperative engineering program. There were approximately 70 men in the first engineering graduation class.

Sharing honors with the young graduates was a trio of men who were awarded honorary Doctor of Science degrees in recognition of their outstanding contributions to the engineering profession. They included Dr. Otto Holden, retired chief engineer of Ontario Hydro.

Waterloo's program calls for alternating academic terms on the campus with on-the-job training terms in industry for practical experience, with one group at the university while the other is in industry. In this way, the university feels that it can offer a well-rounded program of professional training and education; obtain year-round use of university facilities and maintain a sizeable enrolment without sacrificing academic standards.

Under the Big Top

When Toronto Township recently held open house in connection with the official opening of a new court house and police building, it was the Hydro Department which stole the show. They had one of four large tents pitched on the ground of the new building, and they vied with other municipal departments for the visitors' attention. Hydro had the advantage, of course, since it was a hot day and a three h.p. air conditioning unit, in operation as part of the exhibit, kept the tent cool and comfortable. An electrically-cooled water bottle and three reversible suction fans were other working features of the exhibit with

special hot weather appeal. Much interest was also evidenced in an Electric Service League display on the Gold Medallion theme, in appliance demonstrations and street lighting equipment.

Major items such as line trucks and an emergency transformer unit were drawn up outside the tent. Linemen's equipment, was also displayed outdoors.

A Vice-Regal Visit to Niagara



Courtesy Niagara Falls Review

A charming and gracious visitor in the person of Madame Vanier, wife of Canada's Governor General, recently enjoyed her first tour of the Niagara district. Her excellency appeared greatly impressed with developments in the area and showed particular interest in the horticultural features. She is shown with M. S. Cushing of the Niagara Parks Commission after examining Ontario Hydro's unique floral clock. Others in the group, from the left, are: Mrs. Esmond Butler, wife of the Governor-General's secretary; Madame Louise Berger, lady-in-waiting; and Commodore R. I. Hendy, aide-de-camp.

Popular Woodstock Manager Ends Long Hydro Career

A career which has paralleled the development of Hydro in Ontario for almost half a century ended recently with the retirement of Cecil E. Kirkby, manager of the Woodstock Public Utility Commission. He is being succeeded by Assistant Manager P. G. Sanderson.

Mr. Kirkby commenced his 48 years of service in the municipal field with Strathroy



C. E. Kirkby

P.U.C., in 1914. He served with Brantford Township Hydro before joining Stamford Township P.U.C. where he was manager for 22 years. The veteran engineer became manager of Woodstock P.U.C. in 1951.

Mr. and Mrs. Kirkby will continue to reside in Woodstock where he has been active in community affairs.

His successor, Mr. Sanderson, joined the Woodstock utility in 1950, after graduating in electrical engineering at the University of Toronto. He has been assistant manager since March, 1951.

municipal briefs

The all-out effort on the part of Ontario municipal utilities to retain and increase their water heater loads is reflected in their 1962 capital expenditure programs. Funds slated for the purchase of water heaters for rental purposes, in Scarborough, North York and York Township alone, total well over \$1,000,000.

London P.U.C. reports that yearly peaks are now occurring in certain downtown sections of the system in the summertime — as the result of the growing air-conditioning load.

King City Hydro System became the 355th municipality in the Hydro family when it took over the distribution system from Ontario Hydro early in July. The police village purchased the system for \$102,000 — raised by King Township through the issuing of debentures.

Stamford P.U.C. has adopted the additional supplementary benefits of the Municipal Hydro-Electric Pension and Insurance Plan. At a recent meeting, the Stamford Commission also decided to supply a free 40-gallon tank water heater to persons building all-electric homes.

A new "Image" may be in the making for Northeastern Ontario. At a conference of radio, television, newspaper and public relations representatives, held recently in North Bay, it was decided that promotion should now emphasize secondary industry rather than natural resources. Object of the conference was to produce material which could be immediately applied to the development of Northeastern Ontario.

By enforcing paragraph 3 of the Standard Interpretation of Rates, Section 3, Peterborough Utilities Commission hopes to increase its Hydro and water revenue and, at the same time, cause landlords of dwellings with more than one self-contained unit to meter each occupant separately. The paragraph reads: "Where service is supplied through one meter to a dwelling or other places of residence with more than

one self-contained unit where the multiple occupancy is similar to the conditions of a duplex dwelling or an apartment house, one bill shall be rendered at residential service rates with the kilowatt-hours in each block and the minimum bill, multiplied by the number of self-contained units."

Oshawa P.U.C. recently held a builders' seminar at which qualified speakers acquainted local builders with latest developments in lighting, insulation, airconditioning and electric heating. The seminar, cosponsored by an electrical firm, was organized by J. R. Risebrough, meter and sales superintendent of the Oshawa utility.

Owen Sound P.U.C. has decided to raise the requirements for electric services in the city. Effective July I, 1962, all new or replacement domestic and commercial services installed, whether permanent or temporary, must be of 100 ampere capacity, or over. The utility has also introduced reductions to the additional charge of \$100 for underground distribution when certain electrical appliances are installed.

With two electrically heated schools, Latchford, in Northeastern Ontario, is probably the only municipality in Canada which can boast that all of its schools are electrically heated.

Brampton Hydro, which recently introduced lighted street signs in Peel Village, has gone itself one better. Spun concrete street poles have been installed bearing the illuminated number of the home directly behind it. The poles come pre-wired for lighted house numbers.

Listowel P.U.C. has received a certificate from the Electrical Utilities Safety Association signifying three years without a compensable injury.

Oakville P.U.C. estimates its 1962 capital expenditures at \$1,137,800. Of this, \$321,000 is slated for the purchase of rural plant; \$300,000 for an office building purchased by the Electric Department from the Water Department; and \$198,500 for extension and improvements to the distribution system.

All electric water heaters installed in Port Arthur after June 26, 1962, will be metered.

Personalities in the news include Robert J. O'Reilly, chairman of the King City Police Village trustees, who becomes first chairman of the new Hydro system. Robert Berwick and James W. Sim are the other two commissioners. Fire destroyed the premises of Napanee Fuel and Supply Co. recently. Owner Harry W. Vine, Napanee P.U.C. chairman, estimated loss at \$30,000. R. M. Laurie, manager of Ontario Hydro's Western Region, has been elected a member of the National Executive of the Association of Canadian Clubs.



Courtesy North Bay Nugget

Last One In Is a Monkey's Uncle

It was a beautiful day for a swim but these Ontario Hydro summer student employees are actually hard at work laying submarine cable across a bay in Lake Nipissing. Most of the cable was placed by barge, in foreground, but this section was too shallow for navigation. The 7,200-volt cable, plastic insulated and steel covered, will serve summer properties on two islands and a section of the mainland.

Hydro Surveyors Complete Their Toughest Assignment

Ontario Hydro Survey crews have completed the longest and toughest job in their long history of difficult undertakings—the 400-mile E.H.V. transmission line route from the remote James Bay watershed areas to a point near Barrie in Southern Ontario.

Enduring 90 degree heat and sub-zero cold, the survey crews utilized almost every form of transportation from snow shoe to muskeg tractor in their three-and-a-half-year sweep through forest and swamp. Cutting a five-foot swath through the forbidding terrain, they provided a route plan and profile for the engineering design and construction of the 500,000-volt line. First stage of the line is now under construction.

Brampton Hydro Improves Underground Distribution



An important advance in the development of improved suburban underground distribution systems has been introduced by Brampton Hydro with the installation of joint-use pedestals each capable of accommodating electrical, telephone and community television antennae services for up to six homes. The pedestals connect the customer's service with the secondary side of the distribution transformer.

As a safety feature, the pedestals have separate entrances with the power side locked and controlled by the Hydro utility. The T.V. aerial and telephone services are reached independently.

In addition to improving the appearance of underground systems by eliminating clusters of pedestals, this procedure involves considerable economies since the cost of the joint-use equipment is shared. Then, too, Brampton Hydro installs and connects all three services on a cost-sharing basis.

The move to install joint-use equipment for all three services was initiated by Brampton Hydro and agreement was reached after a number of sessions between the participating parties. Burndy Canada Limited was asked to design and engineer a prototype pedestal from specifications presented by Brampton Hydro and which were satisfactory to the other utilities.

A hundred of the new joint-use pedestals are being installed on a trial basis in modern subdivisions. To date, they are working out to the satisfaction of all concerned.

Shown in the photograph, examining the new pedestal, are Brampton Hydro Manager Vern Breen and Therese Kaczmarck of the utility staff.

Almost 600 Attend Annual C.E.A. Meeting

Subjects ranging from utilization voltages to government interference with business were discussed at the 72nd annual meeting of the Canadian Electrical Association, held recently at Murray Bay.

Attended by 592 delegates from across Canada, the meeting elected R. E. Tweeddale, general manager of the New Brunswick Electric Power Commission, president for the 1962-63 term. D. A. Hansen, general sales manager, Calgary Power Limited, and Ontario Hydro General Manager J. M. Hambley were elected vice-presidents.

In his address, retiring President H. F. Beique suggested that the electrical industry should take an active part in Canada's Centenary celebration and that light, "the first important use of electricity", should be made the "instrument of participation."

Government intervention in business, and misguided "provincialism", representing poor purchasing policy, were cited as chief obstacles to the long-term economic security of Canada by C.E.M.A. President Thomas Edmondson.

Toronto Hydro Engineer Dies Soon After Retirement



Toronto Hydro personnel and his many friends throughout the electrical industry were saddened to learn of the recent death of Wilson J. Wylie. He had retired as Director of Consumer Service with Toronto Hydro, in November, 1961.

In apparent good health, Mr. Wylie was stricken sud-

denly on the golf course. He was 68 years old and had been with Toronto Hydro since 1922.

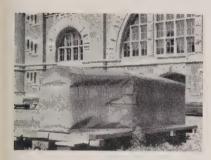
Mr. Wylie was a past president of the Electric Club of Toronto and of the Electric Service League of Ontario. He had served as chairman of several A.M.E.U. committees and was an active member of the Canadian Electrical Association.

Among the survivors are his wife, Audry, and a daughter, Mrs. John Cameron.

OFF THE WIRES



For months the blasé citizens of Toronto have been driving and strolling past a large, coffin-like box propped up in the grassy median strip in the centre of University Avenue, without so



much as a raised eyebrow. Covered in somber black tarpaper and standing on a bier, it looks like the last resting place of a giant in poor circumstances.

But it raised the curiosity of Toronto Daily Star columnist Ron Haggart who set out to solve the mystery. After running a formidable gamut of civic departments, all of which disclaimed responsibility for the deceased occupant of the median strip, Mr. Haggart finally quizzed the right man. An investigation was launched and the mystery resolved.

The black box is indeed a coffin. It is the temporary resting place for the statue of Sir Adam Beck which was removed to permit construction of the new subway. But the metallic likeness of Ontario Hydro's first Chairman will be resurrected to stand over the subway where the public power he advocated so staunchly will convey the populace quickly and safely about its affairs.

When sentiment clashes with progress, as it often does these days, it isn't much of a contest. But nothing can deprive us of a touch of nostalgia, on occasion, and we can understand the edi-

torial writer on the Ottawa Journal who had this to say about electronic cooking:

"At a Toronto Hydro-Electric Commission exhibition there is a device said to be capable of cooking a brook trout in 90 seconds. It is an oven fitted with 'magnetron' tubes which emit high frequency waves. . . The suggestion that it be used to cook trout is, surely, a glaring example of the cleavage between the two cultures, scientific and humanist, of which Mr. C. P. Snow has warned us. . . No man who rises at dawn. takes his fly rod to woodland stream or misty lake, and entices a speckled trout or two to his Dusty Miller will cook his catch in any death ray.

"He will build a proper fire of hardwood in a real stove, put a dab of bacon fat in an iron pan, roll the fish in flour and fry it slowly, letting his palate and stomach come to the right pitch of anticipation. When men stop cooking trout this way they will stop fishing."

We confess to similar feelings upon reading that the northernmost school in Ontario to be heated by electricity is being built in Shillington, a tiny crossroads community 30 miles east of Timmins. When the new, three-room school is opened in Sep-

tember, it will replace a single room edifice heated by four-foot birch logs.

There is no question but what the electric heat will more than make up in comfort, convenience and efficiency for the old-fashioned snap, crackle and aroma of burning hardwood. Still, we have never been required to light a wood fire at 7 a.m. with the temperature down below zero—and so the nostalgia persists.

Vacationers contemplating a visit to Ontario Hydro's Robert H. Saunders - St. Lawrence Generating Station would be well advised to keep an eye peeled for aesthetic qualities above and beyond those represented by the architecture of the station and the mural on the wall. We have in mind Miss Marie Bissonnette, one of the station guides. Selected for her charm, poise and beauty, she is Cornwall's "French Week Queen".

Among other things, golf has been described as a game where a ball 1½" in diameter is placed on a ball 8,000 miles in diameter—the object being to hit the small ball without disturbing the large one.

The Editor, ONTARIO HYDRO NEWS 620 University Ave.,
Toronto, Ontario

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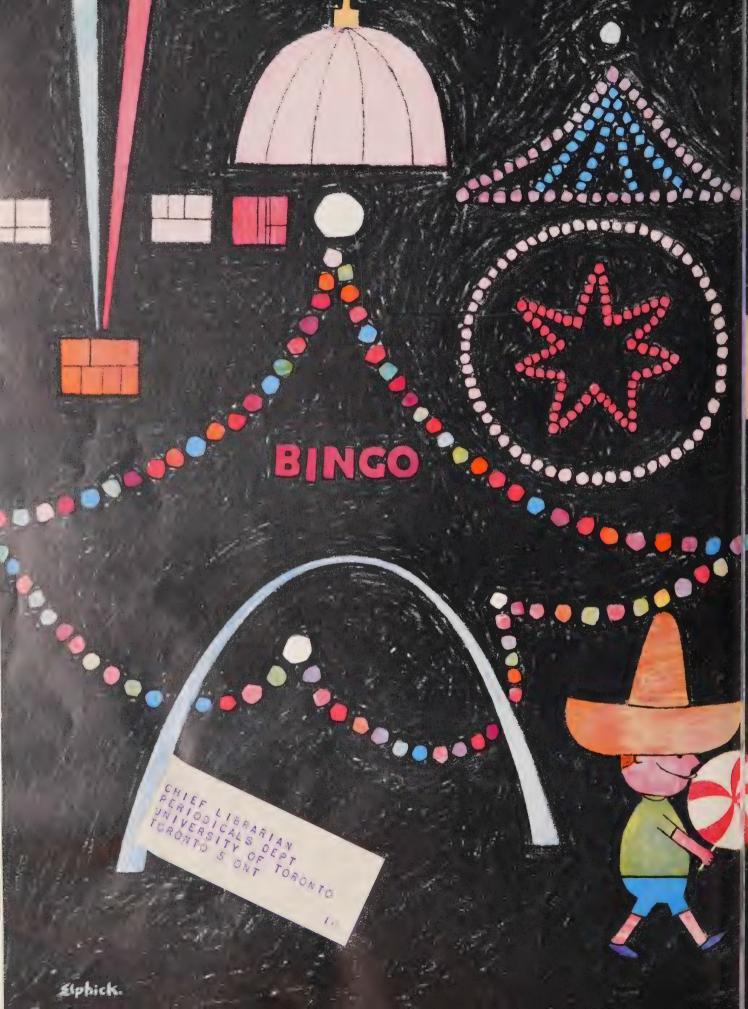
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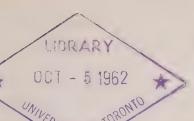
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ONTARIO

HYDRO NEWS

SEPTEMBER, 1962

"Automation operations" — a three-part series dealing with generation, distribution and system control—commences on page 6.





More than half a million customers will benefit from the improved facilities and more convenient location of Central Region's new headquarters. Moving day is described by word and picture on pages 18 and 19.



Biography, a dramatic television presentation of the heroes and villains who have shaped our destiny in the present century, is being brought to viewers across the province by Hydro. In photo above, Mike Wallace, right, series narrator, talks it over with Joel Aldred, who speaks for Hydro on the commercials. Further details on pages 16 and 17.

SEPTEMBER, 1962

ONTARIO HYDRO NEW!

CONTENTS

- 3 A 50th Anniversary at the "Ex"
- 6 Automation in Operations (Part 1)
- 10 Drilling for Electricity
- 12 Underground in Downtown Kingston
- 16 Switch On the Hydro Show
- 18 A New Outlook
- 21 Along Hydro Lines
- 25 Off-The-Wires

THE COVER

Symbolizing the complexity of system operation, our front cover depicts the control consoler and instrumentation for a single until Lakeview Generating Station: Ontain Hydro has made enormous progress in autimating the operation of its systems, and the is described in some detail in the sericommencing on page 6 of this issue.

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Editorial

HALF A CENTURY OF SELLING

Remember the year they published "It's A Long Way To Tipperary"?

Kitchener was still known as Berlin at that time, and Toronto citizens could buy a loaf of bread for five cents. Electrically speaking, the Toronto Electric Light Company offered stylish flat irons (elements guaranteed for five years) at \$3.50 with trade-in.

When Ontario Hydro closed the books in October of that year, seven more communities, including Baden, Beachville, Caledonia, Mimico, Norwich, Port Credit and Port Stanley had received first power from the Commission, bringing membership in the "Hydro family" to 33 municipalities.

Need more clues? It was the year Ontario Hydro engineers surveyed the Wasdell Falls site preparatory to constructing the first Commission-built generating station; systematic inspection of all Ontario Hydro high and low tension lines was instigated, and the power requirements of the Ontario Agricultural College were greater than the combined load of the Mimico, Port Credit and Beachville Hydro systems.

The year was 1912, and among its most significant developments from the Hydro point of view was an 1,800-square-foot display in the old Process Building at the Canadian National Exhibition. It was Ontario Hydro's first promotional venture at the C.N.E., and it symbolized Chairman, The Honorable Adam Beck's determination to sell the benefits and advantages of Hydro service to the people of Ontario.

Half a century later, Ontario Hydro is still at "The Ex," and while its selling methods have become more sophisticated and its efforts intensified, the Commission's promotional policy has undergone a more fundamental change.

In Sir Adam's time, the sole sales objective was to persuade people to adopt a new and mysterious force called electricity for lighting and

for a small number of household chores which had been performed down through the ages by muscle power or other forms of energy.

Today, with electrical distribution lines leading into almost every home, farm, industry and commercial establishment in the province, the target has narrowed but the need for a well-directed sales program persists.

Today, we need have no reservations about attempting to persuade the people at the receiving end of the distribution lines to live and work electrically, since there is a direct relationship between per customer use and power rates. Detailed and extensive studies prove conclusively that, as the kilowatt-hour consumption of a customer increases, the cost of producing and delivering a kilowatt-hour of energy is reduced.

The enormous rise in the per customer consumption of electricity which has taken place during the last 50 years is reflected in energy costs, which have actually declined in the face of vast increases in the cost of most items involved in the production of power.

There is no complex or mysterious principle involved here. Just as it costs almost as much to run an aircraft between Toronto and Vancouver with 50 passengers as it does to send the same plane out with a full complement of 100 paying customers, so the additional cost represented by a greater employment of the Hydro system is small in relation to the additional revenue.

Higher utilization is the answer in both instances, and, in Hydro's case, it can only be achieved by filling out the hollows in the daily and seasonal load graphs. This, in turn, can best be effected through the sale of appliances and equipment with favorable load characteristics.

Herein lies the answer to those who contend that Hydro should forget about sales promotion and be content to provide electricity to those who request it.

Such a policy could only result in more "down" time or under-loaded plant, and a correspondingly higher unit cost. This would directly controvene the premise upon which the Commission was established—the provision of electricity at the lowest possible cost consistent with good service.

Considered in this light, sales promotion can scarcely be construed as a "corporate frill," or said to reflect a dog-in-the-manger attitude towards other forms of energy.

An effective sales program of a scope necessary to reduce idle plant time calls for all the planning, ingenuity and know-how of other Hydro functions, and, like engineering, maintenance, operation and administration, it contributes directly to system efficiency.

Our distribution systems, by their very prevalence and extent, are a tribute to the pioneering sales efforts of yesterday. How fully they are utilized is the challenge of today.



Impressive facade of Hydro exhibit (right) bears appropriate inscription "To New Horizons." Rain cycle exhibit, lower photo, was voted by many as C.N.E.'s most outstanding.

a 50th anniversary at the "Ex"



A lot of people saw Hydro's medal-winning first C.N.E. display in 1912; but the 1962 exhibit, marking 50 years of participation in the "Ex", told the Hydro story in the most intriguing way to date.



In the minutes of an Ontario Hydro Commission meeting held on June 5, 1912, there is a sentence which reads in part:

"The secretary was instructed to advise the engineer to prepare for the forthcoming Canadian National Exhibition . . . " It is signed with a flourish "A. Beck Chairman."

The date and the minute are of special significance for Ontario Hydro this year because the 196 edition of the world's larges annual fall fair—which closed only a few days ago—marked the 50th anniversary of Commission participation.

The C.N.E. was already 33 year old in 1912, and well established as a show place for business an industry as well as agricultura enterprise. The Commission prepared its first exhibit in a remarkably short time and, what is more won a gold medal for excellence.

A description of the display, to gether with eight pictures, form part of the Commission's annua report for the year 1912. Built of



Model cottage (top left) was Hydro's inaugural display in 1912. It contrasts strongly with this year's Medallion home exhibit (left), which terminates "Story of Light and Heat" told by series of tableaux.

1,800 square feet of space in the old Process Building, the exhibit included an office and information bureau, a farmyard showing various machines operated by electric motors, and a model cottage, the "Gold Medallion" home of the era.

But this year's Hydro display, while in the same tradition, was a far cry from that first exhibit. The 1962 version contained some of the most intriguing attractions in Hydro's 50 years at the "Ex".

It occupied more than 7,500 square feet of space in the C.N.E.'s newest building, the \$3,000,000 Better Living Centre, which was built on the site of the old Manu-

facturers Building, demolished by fire last year.

Since 1954 Hydro had occupied space in what was formerly the Railways building. Erected in 1908 at a cost of \$45,000, it housed the C.N.R. and C.P.R. exhibits for many years. Slated to be torn down, the old building was given a new lease on life this year for the Vetiscope '62 display of veterinary medicine.

Before 1954, Hydro exhibits were housed in the Electrical Building near the Princes' Gates.

Hydro's 1962 c.n.e. exhibit certainly ranks as the most ambitious to date. It represented many hours and months of preparation and

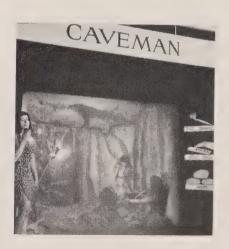
hard work by sales and public relations personnel.

One of the main features was the Story of Light and Heat, a series of five colorful tableaux illustrating man's quest for energy since the days of the caveman. These lead, naturally enough, to a modern Medallion all-electric home. Another large display, illustrating the rain cycle, showed how rain drops are used to produce electricity.

Like so many other Hydro projects, Sir Adam Beck started the ball rolling at the C.N.E. in 1912. Were he alive today, he would have found plenty to be proud of in the 1962 display.









This is the first of three articles summarizing the outstanding

This is the first of three articles summarizing the outstanding progress which has been achieved in adapting automation to the operation of the Hydro system in Ontario. Part one emphasizes generation, part two is concerned with power distribution, and the final article will discuss system control.

Deep in the woods of Northern Ontario, generators hum far from human habitation. Alone and untended, they pour their kilowatts into the power networks with which Ontario Hydro has laced the province.

During the last decade, hydro-electric sites at Manitou, Whitedog, Caribou, Silver and Red Rock Falls have re-echoed briefly to the furious activities of Ontario Hydro's construction forces, and as these withdrew, their work completed, the quiet northern forests returned to their former tranquility.

These stations are remotely controlled and their generating units drone on—indifferent to the presence of man.

Economics, system growth, technological advances, and sociological factors have each contributed to the automation evolution in operations. In keeping with trends in other industries and among its competitors in the energy field, Hydro has adapted its methods to automation for efficient and low-cost operation.

Although automation of generating facilities was started in a small way in the early 1920's, it was not until the 1950's that Ontario Hydro entered the field in earnest.

Rising demands for power in the province necessitated the development of remote and often completely isolated hydro-electric sites. The high cost and difficulty of staffing and supplying colonies for operators led to the decision to implement the new techniques in automation and to control these developments from stations at existing colonies or towns.

And the growing complexity of the system, with thermal and nuclear power sources being integrated, has tended to increase the need for automation. But automation in operation extends beyond the generating station into system control, transmission and transformation.

The rapid development of transmission facilities is, in fact, a major factor in the application of automation. By providing alternate sources of supply, dependence of local areas on one generating plant is removed. This, in turn, makes remote control acceptable, since the reduction in production from individual stations is unlikely to affect customer service.

Automation, combined with larger stations and unit size, has enabled Ontario Hydro to maintain its operating staff at an almost constant figure since 1950. The significance of this achievement becomes apparent when it is considered that, during this period, demands on the system have doubled, and many new stations have been placed in service.

by Bob McDonell



GENERATION

To better understand the man facets of automation in generation let us first turn to Northwester Ontario, to the Kenora Transformer Station, where, in around the-clock shifts, one operator controls not only the T.S., but also Whitedog Falls Generating Station, 30 miles northwest on the Winnipeg River; and Caribor Falls G.S., 45 miles away on the English River.

With direct communication to the Regional Control Centre a Port Arthur, the operator a Kenora can bring in or take out o service, on request, any one of the six units at the two plants.

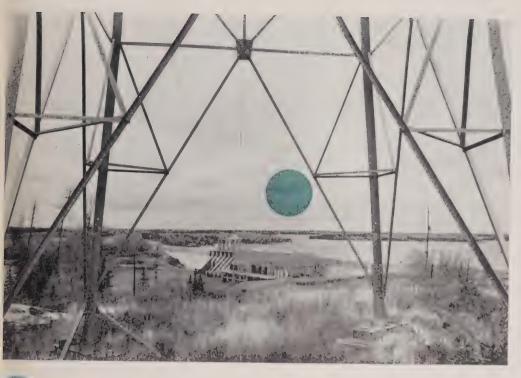
Pushing a button on the contropanel at Kenora sets in motion at automated sequence which open the wicket gates of the appropriat unit at Whitedog or Caribou brings the unit up to speed, and synchronizes the generator to the system.

Many of the station's metered quantities are telemetered into the control room at Kenora to enable the operator to keep a close check on the operation of the equipment

Additional metering is installed at the two plants to enable visiting staff to evaluate more closely the behavior of the equipment. The plants can also be controlled locatly. This allows for on-site operation in case of failure of the remote control link.

While routine maintenance handled by the Kenora Area staf any major maintenance or renovation is usually carried out be Regional maintenance staffs. Depending on local operating conditions, the plants are visited on a average of twice a week for outine maintenance and perfornance checks of the electrical mechanical, and communication systems.

Various types of remote control links are currently in use for the type of station, including communication cable, power line carrier, and radio. Choice depend on cost, security, local condition and the extent to which the plant is automated.



Alone and untended, generating units at Caribou Falls (top photo) and Whitedog Falls (below) pour kilowatts into Ontario Hydro's Northwestern network. Their operation is controlled by a single operator many miles away in control room (opposite page) of Kenora transformer station. There, buttons and meters govern generator sequence and record performance.



Because of the high cost of communication cable, this type of control is limited to relatively short distances, where costs of the cable are off-set by the relative simplicity of the terminal equipment.

Where distances are great and degree of control requires many signal channels, power line carrier or radio links are generally used.

In fact, radio links in the form of a microwave system have been chosen for the control of Otter Rapids and Little Long generating stations, on the Abitibi and Mattagami Rivers, and for the Harmon and Kipling plants to be built on the Mattagami River.

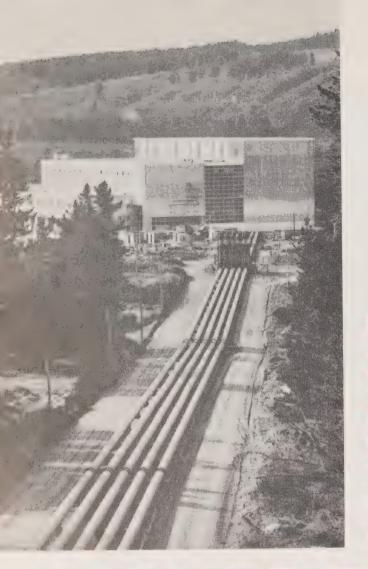
These four stations will be controlled from Pinard T.S., a new transformer station being constructed a few miles from Ontario Hydro's Abitibi Canyon plant. The new T.S. will also act as the northern terminal of Ontario's first extra-high-voltage transmission line designed to carry power from these plants at 500,000 volts to markets in the southern part of the province.

Automation of hydraulic generating stations has developed rapidly since the 1920's, when the first small stations in Southern Ontario were put on remote control. Present indications point to even greater emphasis on automation as control systems improve.

And with the increasing size and complexity of thermal-electric plants, all the aids modern technology can devise will be required for their safe and efficient operation. In the case of nuclear-electric stations, the need for personnel protection is a further incentive to automate as many operations as possible.

For the immediate future, remote control will be used for those plants presently under construction or authorized in Northeastern Ontario. Beyond that, Ontario Hydro envisions fully-automatic power plants which would come on line and function automatically, controlled by a computer constantly reviewing system requirements.

Part II of this series will explore new developments in the field of automation as they concern transformer stations, transmission, and municipal distribution stations.



Dante's Inferno (opposite page) is actually a geothermal area of New Zealand's North Island, where deep bores tap vast reservoir of super-heated steam. Photo (left) shows 20-inch steam mains leading to powerhouse. Silencers at well-head (below) quiet the deafening roar of escaping steam.



FOR ELECTRICITY

New Zealanders are all steamed up over a unique method of power production

by Max Lambert

Geothermal steam, screaming at high pressure from deep bore holes in the volcanic zone of the Nortl Island of New Zealand is today producing electricit on a significant scale.

For centuries the super-heated steam has fer natural geysers and blow holes and drifted fron cracks in the ground but now some of it is spinning turbines at Wairakei in the middle of the island.

The Wairakei project, government owned and operated, taps a vast underground "hot water system" believed to result from contact between subterranear



water and extremely hot, perhaps even molten rock. Bores, drilled between 570 feet and 4,000 feet, release the steam.

New Zealand is the only country in the British Commonwealth to use geothermal steam for power production. Until Wairakei went into production Italy was the one other country in the world with geothermal stations. Now there are similar plants in California and the Soviet Union and other nations have exploratory work under way.

At Wairakei, the first generating units began to turn late in 1958 but because of technical troubles, largely due to the pioneering nature of the work, the plant did not reach full first stage operation of around 70,000 kilowatts until last year.

The plant's second stage is going ahead much more smoothly and it is expected that output will rise to over 150,000 kilowatts in 1962. Later the plant will be extended to the 250,000-300,000 kilowatt size.

At Lardarello, Italy, bores release dry steam but at Wairakei the steam has a considerable amount of hot water that has to be separated before the steam is sent to the turbines. A typical high pressure bore

at Wairakei sends up about 500,000 lb. of steam and water an hour at 200°C. About 85 per cent by weight is water, removed under pressure at the well heads.

Pipelines carry the dry steam to the powerhouse from wells up to two miles away. The steam passes through high, intermediate and low pressure turbines, is then condensed to water and discharged into the nearby Waikato River, the river on which, incidentally, are grouped the North Island's major hydraulic plants.

Thus far New Zealand's geothermal steam potential has been hardly scratched. Hundreds of test bores have been driven over wide areas and most have produced steam.

Though power production is the nation's most important economic gain from geothermal steam this natural resource has been put to other uses.

East of Wairakei, pulp and paper mills use geothermal steam during newsprint production and government forest industries use it to warm seed, sterilize soil and for other nursery tasks. And in the towns of Rotorua and Taupo, homeowners drive backyard bores to gather steam for central heating.

How's the Commercial Underground?



Kingston P.U.C. meets to discuss underground distribution. From left to right are: General Manager G. R. Davis; Chairman, Dr. R. H. Hay; Mayor W. T. Mills; Secretary-Treasurer Alex Bowie; and Commissioners R. W. Sutton, R. A. Fray and E. L. Dauphin.

When the Kingston Public Utilities Commission decided early in 1956 that it would have to replace the commercial underground system which had supplied downtown merchants since 1914, there was little fanfare about it.

With a "we're just doing our job" modesty typical of so many of Ontario's municipal public utilities, the Kingston Commission studied and authorized the job, and the work, under General Manager G. R. (Cap) Davis, got

quietly underway.

It was a job of extensive proportions. Some 1,000 Kingston merchants carry on business in the 25-block area forming Kingston's main downtown commercial community. How, the utility wondered, would Kingston businessmen react to having sidewalks opened up so that underground ducts could be installed?

How could the sometimes granite-hard Kingston limestone—which in parts of the city is only a matter of inches under the soil—be moved out to make way for ducts? Blasting in a busy commercial street was next to impossible.

The problem of designing, engineering and installing the system was turned over to Chief Engineer Ken Fee. Together with Number Two man, Howard Moodie, and an eight-man engineering department, Mr. Fee tackled a problem with which the utility to date had little experience.

"We'd done some work with residential underground," says Ken Fee, "but a downtown, commercial underground proposition was an-

other kettle of fish."

They chose a radial feeder system

The Kingston engineers chose to replace the old underground with a radial feeder system rather than a full-fledged network. Such a system of separately-fed blocks of customers would be less complex to operate. The effects of one outage would not necessarily be felt throughout the whole system. And the cost would be lower.

The secondary system is therefore designed to be operated radially although facilities are built in to allow for inter-connection in an emergency and for future network operation. It is a 125/216-volt three - phase system with the cables being carried in ducts of black fibre encased in concrete. The ducts are located under the sidewalks on either side of the street.

It is interesting to note that the secondary mains are color-keyed for easy phase identification.

The primary supply is at 4,160 volts. Twelve subway-type transformers (rated at 500 kva) are situated in vaults equally spaced throughout the system.

Good contractor co-operation

How is the building of the new underground system proceeding?

"We're 75 per cent finished." says G. R. Davis. "And we hope to complete the job next year. To date it has cost about \$600,000, and another \$100,000 will see it finished."

Like Dr. R. H. Hay, chairman of the Kingston Commission, and Robert W. Sutton, Robert A. Fray, Ed L. Dauphin and Mayor W. T. Mills, commissioners, Mr. Davis is obviously pleased with the new system from just about every aspect.

The job of digging the trenches, laying the ductwork and backfilling was carried out by contractors. "And we were fortunate in having good ones," says the Kingston general manager. "They worked fast and with a minimum of upset, and this paid off for us in terms of good public relations."

The contractors chose to trench through the bluish-grey limestone by using air drills. "It took a little longer and cost a little more,"

It had to be replaced!

Records show that Kingston's electricity system was privately owned until 1904, when it was purchased by the city. Some nine years later the city fathers chose to set up a commission which would be responsible for gas, water and electricity.

It was at about that time too, that the first underground commercial system in Kingston was built. It was a 115/230-volt single phase development. Clay ducts were laid in the street gutters. These ducts were located under the gutters and manholes spaced to suit customer service entrance locations.

Mr. Davis says the system performed well through the years leading to 1950. Then, with the commercial load steadily growing, the Kingston utility realized an increasing number of problems with the, by now, 40-year-old system. Outages began to occur more and more frequently.

Then, too, transformers on the old system were pole mounted and were a visual source of annoyance co residents and merchants. For ome unexplicable reason, trucks and cars had a way of running into he exposed transformer installaions, creating additional nuisance utages.

KINGSTON

The Kingston of the early 1900s pioneered a commercial underground system;

now with loads on the increase

it's being replaced with a minimum of upset



says Mr. Davis, "but again wavoided the unfortunate effect blasting might have had on local businesses and on the ancient laid up stone foundations of some of Kingston's down-town buildings.

The Kingston utility's own four man crew of underground specialists took over from the cor tractors to lay the cable, make th transformer installations and conplete the hook-up.

Howard Moodie has high prais for this underground team, an particularly Foreman John Powel who studied and trained after reular work hours to become praficient in underground installatio before taking on the job.

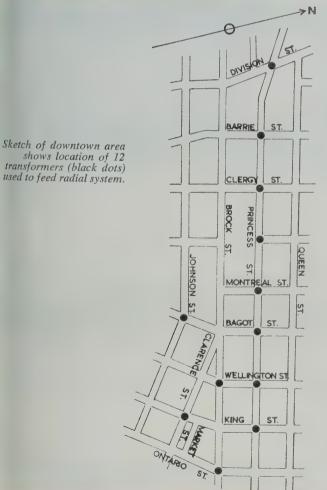
Dr. Robert Hay, who, as chai man of the Commission, is vermuch aware of what public raction has been to the underground undertaking, feels the utility has been successful trying to gauge public wan and needs and conduct itse accordingly.

"After all, that is the conce under which the public utili must operate. While it may ha clearly defined responsibilities the municipal council, it also h responsibilities to its customers a though they may be somewhat le well defined."

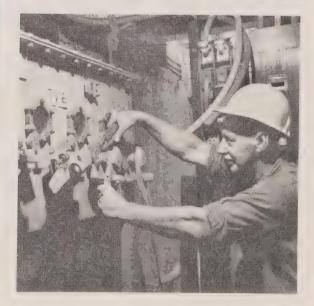
Feeling as he does, Dr. Hay content that the decision to build the downtown undergroup was properly taken, and that twork itself is in very capal hands.



Something of an eyesore, the old pole-mounted transformer installations, opposite page, are being removed. Photo, immediate left, shows John Byrne and Foreman John Powell of the underground crew at a new downtown transformer vault. Below, Chief Engineer Ken Fee and Howard Moodey check plans with Draftsman Wilf Kenney. Russ Patterson and Bert Rivers work in background. Reg Oakley (bottom) is shown inside new transformer vault.









SWITCH ON THE HYDRO SHOW







BIOGRAPHY STARTS ON:

| Cornwall Kingston | CJSS-TV CKWS-TV | Monday, Sept. 24 Saturday, Sept. 15 Tuesday, Sept. 11 Saturday, Sept. 15 | 7:00 p.m 7:30 p.m. | Peterborough Port Arthur | CKPR-TV | (Oct. 30 the program) | 7:30 p.m. 6:30 p.m. |
|-------------------------------|-------------------------------|---|-------------------------------------|-----------------------------|-------------------------------|---|---|
| London North Bay Ottawa | CFPL-TV CFCH-TV CJOH-TV | | 5:30 p.m. 8:30 p.m. 7:00 p.m. | Timmins Toronto | CKSO-TV CFCL-TV CFTO-TV | will switch to Tuesday) Tuesday, Sept. 11 Saturday, Sept. 15 Sunday, Sept. 9 | 7:00 p.m. 7:30 p.m. 8:30 p.m. 5:30 p.m. 7:00 p.m. |

Ontario Hydro and the municipal utilities are sponsoring a top-flight TV documentary series entitled "Biography" and featuring leading personalities of this century

When the dynamic personalities who have shaped the world's destiny in recent times are introduced to the people of Ontario this fall through the medium of television — their host will be Hydro.

Biography, a new half-hour TV documentary series beginning in September and continuing for at least 41 weeks, will be carried over 14 major stations across the province.

Sponsored exclusively by Ontario Hydro and the municipal utilities, the series makes dramatic use of historical and new film footage—some of it being publicly released for the first time—to recreate the stories of men and women whose lives have left their mark on history.

Churchill, Edison, Freud, Hitler, Stalin, Amelia Earhart, Gandhi, Franklin Roosevelt and Admiral Byrd are among the world figures whose biographies are presented. Mike Wallace, noted television personality, narrates the series.

Archives, libraries, private collections, movie and newsreel companies, families and heirs were among the varied sources drawn upon by Biography researchers for film, photographs and other illustrations to assemble the programs.

The result is a terse, top-flight documentary.

"Biography will be an effective part of our marketing program," says General Manager J. M. Hambley, "and the high quality of the series should also serve to reinforce the modern image of Hydro in the mind of the public.

"It has been stated on many

occasions that the support of Ontario Hydro and utility staff members is vital to the achievement of our overall goals in promoting our product and services. I believe Biography is a program with which all members of the Hydro family will be proud to be identified," he adds.

Officials of the Ontario Department of Education have previewed programs from the series. They have been sufficiently impressed to recommend certain episodes to secondary school students throughout the province.

Biography will be presented to viewers by "Your Local Hydro and Ontario Hydro." Commercials, featuring announcer Joel Aldred, are being especially prepared for the new series.

"Each 30-minute program will contain three, one-minute commercials in support of marketing objectives," explains A. V. Crate, Hydro's manager of advertising and marketing services. "They will promote the varied uses of electricity of interest to residential, farm, commercial and industrial customers, and will, as well, be in proper keeping with institutional objectives.

"Until now, TV advertising has consisted of spot announcements and flashes," he continues. "We believe this change in programming to include a weekly half hour program will contribute substantially to the mutual load-building goals of Ontario Hydro and the municipal utilities by providing a strong vehicle of advertising communication."

At the same time, Mr. Crate

adds, advertising in other media such as newspapers, radio, consumer magazines, trade journals and direct mail will continue.

"Ninety-three per cent of Ontario households now have a TV set. Through this medium, we can demonstrate our product and services, combining visual impact with the persuasiveness of the human voice. We have been mindful, in entering into programming, that we should bring to an audience a program which best combines education with entertainment, and we believe Biography does just this."

Televised in the San Francisco and New York City areas for the first time this year, Biography won top ratings from sponsors and viewers alike. On the West coast it captured 40 per cent of the viewing audience in competition with three other stations carrying established programs. In the highly competitive New York area, the program attracted almost 38 per cent of all viewers one evening. Canadian viewers will be seeing this dramatic new series for the first time when Hydro sponsors it this fall.

Joel Aldred is one of Canada's best known announcers. For the past five years he has logged about 275,000 miles annually between the TV production centres of Toronto, New York and Los Angeles.

A top Canadian production team has been busy producing Hydro's special television commercials, and substantial program promotion is in progress to build maximum audience quickly for this new program.

A LOOKOUT The new building Region's geographic better situated for que

The thirty-six
municipal Hydro systems
served by
Ontario Hydro's Central Region
will benefit by
this handsome new building.

Ontario Hydro has recently put its Central Region operation into brand new, electrically-heated headquarters located on North Yonge Street in Willowdale.

Its a move likely to have happy implications for all the municipal Hydro systems and Ontario Hydro Area Offices located in the Central Region as well as for the Regional staff of more than 150 people. From the point of view of transportation and communication, the new location at 5760 Yonge Street is much superior to the Central Region's original headquarter on Toronto's downtown Bloor Street.

Regional Man ager Adam W Smith, obviously pleased with the new location, says

the new building is much nearer the Region's geographic centre and, therefore better situated for quick contact with loca utilities and local staff. "For another thing," said Mr. Smith, "we will have our staff operating under a single roof, and that should result in increased operational efficiency as well as smoothe communications."

The administrative staff of the Region' Lakefront operating area as well as th North York Inspection group are also located in the new building.

The largest Ontario Hydro Regiona headquarters, it is electrically-heated and air-conditioned. Main wing of the "L shaped office measures 165' x 50', and the adjunct 110' x 47'. It is two storic high with basement, and cost approx mately \$750,000 to build.

Central Region encompasses an area of 1,969 square miles, and serves 36 mun cipal Hydro systems with a total of 596,469 customers. The Region also serve 45,326 customers directly—through is seven area offices—including five large industrial customers.

Largest of Ontario Hydro's Regions operations in terms of customers, Centra is now in a position to improve stifurther the excellent service for which is noted.



In a huddle over a thousand-andone details associated with move are, left to right: Ed Storus, paymaster; K. C. Coleman, regional accountant; and R. H. McComb, organization and methods officer. Other candid views capture moving-day atmosphere.







A SMOOTH MOVE

A private moving contractor with four 1,000-cubic-foot vans and a staff of 40 men worked with an Ontario Hydro crew of 20 people, in carrying out the Central Region move.

And it all took place in one short weekend.

It began at closing time on Friday, July 27th, and went on all day Saturday, winding up late Saturday evening. Sunday was reserved for communication hook-ups.

When the Central Region staff came to work Monday morning, it was not to the former offices on Bloor Street in downtown Toronto, but to the spanking new premises on the northern edge of metropolitan Toronto.



Ross King (right) demonstrates the hot water service to two pretty members of Central Region staff. Lower photo suggests how wagon can be hauled by any available vehicle.



Few of nature's bounties have been bestowed with more abundance than the great gift of water, but raise its temperature a bit and it can become a rare and precious commodity.

Ross King, sales supervisor of Ontario Hydro's Central Region, was thinking along these lines when he dreamed up the hot water wagon—a public relations gesture par excellence and one well calculated to win friends and influence people in favor of Hydro.

Like most good ideas, it was a simple one. From experience Ross knew that hot water was often hard to come by at fairs, exhibitions, picnics, jamborees and similar large social gatherings where there are dishes to be washed, coffee to be made, faces to be scoured and a dozen other tasks.

He reasoned that if Hydro could come to the rescue with an abundant supply of hot water, folks would be apt to think more kindly of their benefactor at bill-paying time, or on the rare occasion when outages interrupted their electrical supply. It also seemed like a good way to demonstrate the fastrecovery qualities of electrical water heaters.

Selling himself on the theory, Ross next sought out a practical way of providing the hot water on a limited budget.

He turned to A. W. Manby machinist Ralph McFarland for mechanical assistance, and the pair came up with the answer.

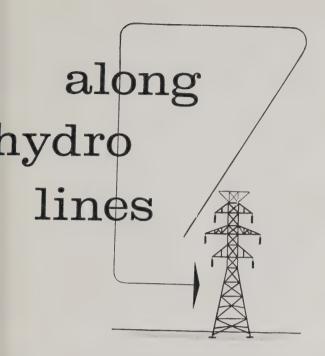
A discarded F.S.D. transformer trailer was converted and fitted out with four 50-gallon tanks equipped with 4,500/1,500 watt elements connected in parallel. The unit operates at 220 volts but, when pre-heated, a 115-volt system is sufficient to operate the water pump and floodlights. It can be whisked behind most any vehicle, and on the job it can deliver 60 gallons of hot water per hour.

Once in service, the hot water wagon's popularity exceeded even Ross King's expectations. After a tough stint at the C.N.E., it faces a heavy schedule of appearances at fall fairs and other gatherings in the Central Region. It is also being made available to municipal utilities and area offices who wish to provide a free hot water service—"any place," says Ross King, "where people can use hot water by simply bringing a pail and helping themselves."

And the wagon's assignments have been diverse. Recently, for several days on end, it supplied hot water for showers and basins used to clean up 150 grubby little boys and girls at a riding academy on Metro's outskirts.

But an emergency request by Milton Hydro sent the wagon on its most unusual mercy mission to date. It was pressed into service to warm up a large tank in a local church and may well have prevented those being baptized by immersion from catching pneumonia.

PR IN HOT WATER



ilities Request Expanded bor Relations Service

In answer to a request by the municipal utilities at Ontario Hydro expand its advisory and consultg services in the field of labor relations, the Comssion has added a new department to the Labor elations Division.

Named the Department of Municipal Electrical cilities, Labor Relations Service, the group will ovide an information service on labor relations atters to municipal utilities who request it. E. G. eynolds, formerly Personnel Officer, Niagara Region, ads the new department.

In announcing the change, W. H. Barnes, director the Labor Relations Division, noted that the move s made to improve administrative efficiency and it department staff were being recruited from string Commission personnel.

onto Hydro Man Heads ernational Society



For the second time in its 57-year history, a Canadian has been elected president of the 10,000-member Illuminating Engineering Society. He is G. Franklin Dean, supervising engineer of Toronto Hydro Electric System's Lighting System.

Mr. Dean brings almost 38 years of experience in lighting service to his new office.

When I started in this business, the general level illumination was about 5 footcandles. Today it is closer to 200 footcandles, with special applications going as high as 2,000," Mr. Dean says.

"But illuminating engineers are now concentrating on quality rather than quantity, and our Society is involved in extensive studies of such factors as glare, angle of light and other factors which should solve many of the problems of eye-strain and fatigue which our researchers have found to be directly linked with illumination."

One of Canada's foremost illuminating engineers, Mr. Dean was elected a Fellow of the Illuminating Engineering Society in 1956 in recognition of his distinguished service.

An honor graduate in engineering from the University of Toronto, Frank Dean commenced his career with Toronto Hydro in 1924. Since joining I.E.S. in 1928, he has undertaken scores of assignments for the Society.

He was an early officer in the Toronto group, and served nationally as Regional Vice-President for Canada in 1949. Since that time he has held all the national elective positions in the Society.

He will assume office October 1, following the annual meeting of the I.E.S. in Dallas, Texas.

Telephone Group Outlines Policy on Underground Plant

In a recent letter to the Canadian Electrical Association, L. G. Buck, on behalf of the Telephone Association of Canada, outlined a four-point policy individual members of his association will be encouraged to follow in a long-range program to implement the burying of utility plant.

The points are:

- 1. Continue to promote establishment of buried plant and seek ways to make it more economical.
- 2. Foster co-operation with the power industry in finding ways and means to jointly effect burying and to seek means of developing economic methods.
- 3. Undertake experiments and development aimed at improved methods.
- 4. Co-operate with municipalities and public bodies in their endeavors aimed at street clearing projects on a planned basis.

Hydro to Purchase Two Computer Systems

Success in implementing comprehensive computer programs and the demand for many new varieties of information has influenced Ontario Hydro to purchase almost \$2 million worth of electronic data processing equipment.

The decision to purchase Univac 11, which the Commission has rented since 1958, and a second

similar system, was made after detailed studies indicated that the capacity of the rented computer would be considerably exceeded by early 1964. Both systems will be modified to increase their "memory," and one will be equipped with "floating point arithmetic" to facilitate processing of engineering work.

Very attractive terms were obtained from the manufacturers, and Commission planners estimate that the two systems will satisfy computer requirements until about 1970.

Metermen Plan a Workshop



This shirt-sleeve session was called to work out the details of a two-day workshop on metering practice to be held in Toronto, November 15 and 16. The group is composed of members of the Metering and Service Entrance Equipment Committee of the A.M.E.U.

From left they are: W. R. Percival, Ontario Hydro; Art Veryard, Kingston; Vint. Poole, London; Al Lawson, Sarnia; Joe Douglas, Scarborough; Elliott McBroom, Toronto; Ray Coles, A.M.E.U.; and M. A. Coker, Sarnia.

Higher Residential Voltages Receive Set-Back in U.S.

"Death came quietly last month to the proposed standard for higher service voltage for high-use residences. The final spark was extinguished when NEMA's Board of Governors approved the vote of member companies against recognition of either 240/480 or 240/416-v service for residences. With its passing utility engineers lost one of the most promising opportunities of the decade to cut distribution cost in the face of soaring demands in a climate of continuous inflation."

The above, quoted from a recent editorial in the trade magazine "Electrical World", is particularly topical in the light of the interest currently being shown in higher distribution voltages by various Canadian groups.

The editorial goes on to explain how United States utility engineers sought to extend the higher voltage concept, approved in the industrial and commercial field, to residential service. The engineers believed it would be advantageous, the editorial points out, for high-rise apartments and for relieving overloaded wiring in older buildings. Too, utility engineers promoting the total electric concept found that 240/480-v distribution would be helpful in pruning the cost differential for underground distribution to high-use homes. According to the editorial, the engineers had sought out experimental installations and had proposed a standard.

In conclusion, Electrical World had this to say "When critics next feel moved to belabor distribution engineers for failure to produce 'a single original idea' they might recall the fate that befel this brainchild."

IN THE LOOKING GLASS

... as others see us

Dear Sir:

In the June, 1962, issue of Hydro News, in the "Off-The-Wires" section, you mention the St. Thoma P.U.C. advertising match book and its "catchy message.

We thought you would be interested in our which is, perhaps, a little more subtle in its approach

We find these kits are very well received by men as well as women. Most men, apparently, are pleased to receive them as a little gift to give to their wive or girl friends.

George E. Exelby, Toronto Hydro-Electric System

Editor's note: Mr. Exelby enclosed a "match" folde which is really an emergency sewing kit complet with stop-run sticks, needles and a selection of threat The inside cover carries the message: "Electricity Matchless."

Main Fuses Too

Ottawa Hydro Manager Fred York points of that his utility makes no charge for changing an house fuse in answer to a customer service call. H was drawing attention to a recent item in "Municipa Briefs" wherein we said that this applied "on a but main house fuses."

The Edito

An Orchid For Brampton

Under the heading "Light In The Dark," Bram ton Hydro received this tribute from the Brampto Times and Conservator:

"Brampton Hydro receives The Times' orchide the week for its efforts to brighten the nights is Brampton.

"Hydro is experimenting with illuminated stre signs and illuminated street numbers in the spu concrete light standards which will provide a guiding light for those groping through the night in search of a friend's home. New improved street lighting from pole-top luminaries will give Brampton's streets a brighter look.

"With these developments, Brampton Hydro is leading its counterpart municipalities all across Canada in initiative and imagination. Too often public utilities anywhere are looked upon as riddled with red tape and lacking progressive thinking, but the Hydro Commission is shooting holes in this theory"

Toronto Hydro at the C.N.E.



Judging by the number of inquiries handled by personnel in attendance at Toronto Hydro's C.N.E. display, the utility made the right move in featuring details of the many special services it makes available to its customers.

Located in the new "Better Living Center," the exhibit featured air conditioning, electric home heating, better lighting, water heater service, and the wiring and appliance finance plans.



Enjoying a pre-opening tour of the C.N.E. exhibits, Toronto Hydro Chairman Bertram Merson, centre, and George E. Gathercole, First Vice-Chairman of Ontario Hydro, stop to chat with Miss Shirley Clark. This up-to-date Miss in a period costume helped grace Hydro's "Story of Light and Heat" told in five tableaux spanning progress from prehistoric times.

municipal briefs

Sandwich West Hydro, like many Ontario utilities, has recently reduced electric home heating rates, and it is making sure its customers are aware of the value this superior type of heating now represents. The utility recently sent out bill stuffers citing the cost of heating four local homes from January 1, 1961, to December 31 of that year, based on the actual energy consumed for heating purposes in that period.

At the new rate of 1.08 cents per kilowatt-hour net, costs ranged from \$117.93 for a 1,000-square-foot ranch-style home to \$185.54 for a 1,700-square-foot tri-level. The message invited customers to compare these costs with their gas, coal or oil bills.

When Trenton P.U.C. sent out routine overdue notices to customers Clifford Baker and James MacDonald, the bills were paid promptly. Both men are members of the P.U.C.

Sudbury Hydro may do its own shopping where appliances for home economics classrooms are concerned. Because of a wide variation in prices between similar appliances of different makes, the Commission feels that unnecessary expense could result from allowing the schools to choose for themselves.

Port Arthur Hydro will have Ontario Hydro as a tenant for another 10 years as a result of a lease signed recently. Northwestern Region headquarters are in the P.U.C. building.

Oshawa P.U.C. has acquired equipment for inserting and folding bills and advertising material. Cost of the equipment was \$2,000. Previously, about 11,000 monthly bills had been prepared by hand for mailing.

Brampton Council has started wheels turning which may result in a new Ontario city. It has passed a resolution asking the Ontario Municipal Board to raise the town to city status.

By mid September, Ontario Hydro had received orders for some 650,000 school-book covers for distribution by the municipal utilities and rural operating areas across the province. As in previous years, the covers are being made available to the utilities at cost.

The Town of Charlton, a tiny municipality in Northeastern Ontario, has signed a contract with Ontario Hydro for the installation of street lighting. It will bring light to streets which have been dark since 1922, when the disastrous Haileybury fire left a population of 700 people homeless and destroyed the light standards along with most of the town. H. Devries, town clerk and treasurer, reports that the population has since dwindled to 165, but has remained constant for a number of years.

Concise but comprehensive and handsomely illustrated, the 51st annual report of the Toronto Electric Commissioners draws attention in its introductory

passages to the changing outlook.

"It should be realized," the report says, "that the problems in the second half century of our existence will be radically different from the early days. Previously the necessity to supply a snow-balling demand for more and more power was the prime consideration. Today, the promotion of numerous new applications to electrical living has made it necessary for us to greatly expand our customer advisory service, which has required the training and reorientation of our staff, in order that they be kept up-to-date.

The changing pattern was confirmed by the operating figures themselves. While the system's peak load for 1961 was virtually unchanged from the previous year, total energy sold increased by 3.61 per

cent.

Faced with the need to increase their rates, a number of Ontario utilities are using local newspaper advertising to tell their customers why. Typical is Port Arthur P.U.C., which used this message preceding details of the new rates.

"Since 1950, your Public Utilities Commission has extended service to 4,585 new customers (an increase of almost 50%), and has added necessary new station and distribution facilities to the system at a cost of over \$2½ million, more than doubling our total plant value.

"These expenditures and steadily rising operating costs have been met until 1961 without recourse to borrowing or increasing rates. However, present revenue will no longer meet costs, and it becomes necessary, therefore, at this time, to introduce new rates which will place your Utility on a proper financial basis and permit your electric system to keep pace with the needs of this growing municipality."

The utility accompanied the announcement with a table giving the cost of operating various electric

appliances at the new rates.

Brockville P.U.C. has followed suit by inserting a similar ad and substituting details pertinent to the local situation.

Vandalism, a perennial public utility headache, has been particularly bothersome in Cochrane lately, and the P.U.C. has launched war against the offenders. It authorized payment of \$100 reward for information leading to the conviction of persons damaging town property, and has erected signs to this effect in appropriate locations.

Scarborough P.U.C. has decided to abolish the consumer deposits formerly required of new customers.

As a result, refund cheques totalling some \$500,000 will be mailed to customers during the next few years Simple interest of 3% per annum is being paid on deposits so that some customers will receive refunds of up to \$20.

Personalities in the news include W. L. Wade, who has served Nipigon for many years in various capacities, and has announced his retirement as manager of the Hydro Commission. A reception and dinner were recently held to honor Charles A. Walters, who recently retired as secretary-manager of Napaner P.U.C. Mr. Walters, now 84 years of age, has served in the utility field since 1904. N. J. Douglas, secretary of the Smiths Falls Hydro Commission for many years, was recently honored at his retirement. He had been 40 years with the Smiths Falls utility.

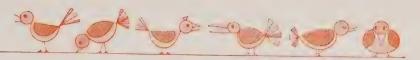
Dry Weather Puts Onus On Steam Generation

Ontario Hydro is relying heavily upon steam powered generation after a season in which rainfal in many of the province's watersheds has been much below average. The flow on the Ottawa has been the lowest in 50 years, while the Niagara and S Lawrence rivers are also down.

This has resulted in a cutback in output fron hydro-electric stations in Southern Ontario. Coaburning plants have taken up the slack, and wer recently supplying more than a fifth of total power demand.



OFF THE WIRES



School is very much in the news these September days, and we were interested to note a recent newspaper clipping to the effect that Frederick Gorbet, a Welland high school student, had been awarded one of York University's top scholarships, valued at \$1,300. His face looked familiar and, sure enough, he turned out to be one of the winners in the last Ontario Public Speaking Contest.

We cannot help wondering just how much the extra poise and confidence Fred attained through public speaking will influence a career which has commenced so brilliantly. And Welland Hydro, who co-operated in the contest at the local level, will count their small monetary contribution as money well spent.

* * *

Evidence continues to pile up suggesting that there is a direct relationship between formal education and the amount of moneyone can expect to earn. According to the Canadian Manufacturers' Association, a recent check on the presidents and board chairmen of the hundred largest manufacturing companies in the United States confirms the growing inclination to appoint top positions only to those executives with solid educational background.

Of 200 executives, 86.5 per cent, or 173, had attended university. When a similar study was made in 1953, the comparable figure was 75 per cent.

Knowledge may still be its own reward, but it seems to be getting pretty well mixed up with the size of a man's pay cheque.

* * *

Our heart goes out to the stalwart moke-eaters of Sudbury whose teats of derring-do over the years may well be forgotten if they are observed going about their new chores. They owe their sorry plight to the local horticultural society, who received permission to hang decorative flower pots above the city streets but forgot that plants require moisture.

This oversight became only too apparent during a recent hot spell, and when Hydro and the public works department graciously turned down all requests to man the watering cans, the firemen came blushingly through. And who can blame them if they go about nourishing the nasturtiums in the dead of the night?

* * *

Stratford P.U.C. is the latest utility to report that its bungalow - type substations, located throughout the residential areas have passed the camouflage test. Literature addressed to the housewife has recently been turning up at the doorsteps of these stations, suggesting that at least one brush salesman can't tell them from the house next door.

* * *

There is something incongruous about the 600-foot-high space needle rising out of a diamond-bright sea of electrical illumination and surrounded by electronic marvels of the 20th century to dominate the night-time skyline

at the Seattle World's Fair. For the "eye" of the needle, held aloft for the multitude to behold, consists of a 50-foot natural gas beacon. We wonder whether or not fair officials thought this one up on their own — or whether the beacon is burning brightly in tribute to the biggest advertising coup of the times.

* * *

And in the field of new developments we were intrigued by a device invented in England and brought to our attention through "Trade Topics", a pamphlet published by the British Information Services. The item reads:

"Payroll thieves who grab a new British safety bag will get a surprise: within three seconds of the carrier's thumb leaving the release pin, the handle clamps down on the thief's fingers so that he cannot let go; three telescopic arms shoot out from the bottom, and the narrow ends of the bag to a span of 12 feet, making it impossible for him to get into a car or truck; and a police whistle sounds an alert from inside the bag."

Devilishly clever, these British, but why not provide the bags with retractable legs so they could trot the culprits off to jail without the aid of a "Bobbie"?

| 623 University Ave. Toronto, Ontario | 1 |
|---|--|
| My address | is incorrectly listed; please change it to |
| NAME | |
| COMPANY | |
| STREET and NO. | |
| TOWN or CITY | PROV. |

| LOCATION | ADDRESS | BUILDER | OPEN HOUSE |
|--|---|---|--|
| Central Region Oshawa Brampton Brampton Cooksville North York North York Markham Keswick | Glendale Acres Medallion Hill Peel Village Blossom Gardens Hillcrest Village Don Valley Village Rouge Hills Spring Road | W. T. Lamson T. M. Campbell Co. Ltd. Village Home Builders Geo. W. Pattison Const. Ltd. Schickendanz Brothers Ltd. Consolidated Building Corp. D'Antimo Const. Ltd. Suburban Builders | Sept. 7-Oct. 21 Sept. 14-Oct. 21 Sept. 7-Oct. 21 Sept. 7-Oct. 21 Sept. 7-Oct. 21 Sept. 7-Oct. 21 Sept. 7-Oct. 21 Sept. 7-Oct. 21 |
| Eastern Region Ottawa Ottawa Ottawa | St. Claire Gardens Hillside Gardens Greely, Ont. | Kirk Builders Ltd. George McLean Andre Wouters | Sept. 8-Oct. 21 incl. Sept. 7-Oct. 21 (weekends only) Sept. 8-Oct. 21 (weekends only) |
| East Central Region Peterborough Peterborough | Fairview Chemong Rd. | Vincent Plati Earl Minor Construction | Sept. 7-Oct. 5 Sept. 7-Oct. 5 |
| Niagara Region Beamsville Beamsville Simcoe | Whittaker Heights Whittaker Heights Cedarview | Hall-Ogilvie Ltd. Reimer Construction Gibson & Beckett | Sept. 7-Oct. 21 Sept. 7-Oct. 21 Sept. 21-Oct. 21 |
| Western Region London London London Chatham Chatham Stratford Wallaceburg Sarnia Sandwich West Sandwich West | Oakridge Acres New Meadows Ridgeview Heights Coverdale Extension Lynwood Belmont Gardens Martin Park Parkdale 3311 Avondale Cres. 3420 Avondale Cres. | Suzuki Construction Roy James Ivan Johnson Bill Crow Romoe Resturick Const. W. Denny Skinner & LaPraise Const. J. Vanderhide Const. Phil Lamb Design Builders Ltd. | Sept. 7-Oct. 21 Sept. 7-Oct. 21 Sept. 7-Oct. 21 Sept. 7-Oct. 21 (except Sundays) Sept. 21-Oct. 21 Sept. 21-Oct. 21 Sept. 7-Oct. 21 (by appointment) Sept. 14-Oct. 13 Sept. 7-Oct. 6 (except Sundays) Sept. 7-Oct. 7 Sept. 7-Oct. 7 |
| Northeastern Region Sudbury | Farmdale Village | Shouldice-Hugh Co. Ltd. | Sept. 8-Oct. 21 |

MEDALLION SHOWCASE



- The Gold Medallion—symbolic of the finest in electrical living will be familiar to a lot more people before the last leaf falls this autumn.
- A province-wide showcase of all-electric Gold Medallion homes opened for public inspection, September 7, and will continue, in most instances, until October 21. A co-operative effort by the municipal electrical utilities, participating contractors and Ontario Hydro, the sho case is designed to acquaint the public with the many attractive electrical features represented by the Gold Medallion symbol.
- And every person who visits a showcase home during the open house period will be eligible to win a matching automatic electric washer and dryer—one of eight pairs being donated by Ontario Hycas an incentive to visitors.
- Gold Medallion showcase homes are located as above.

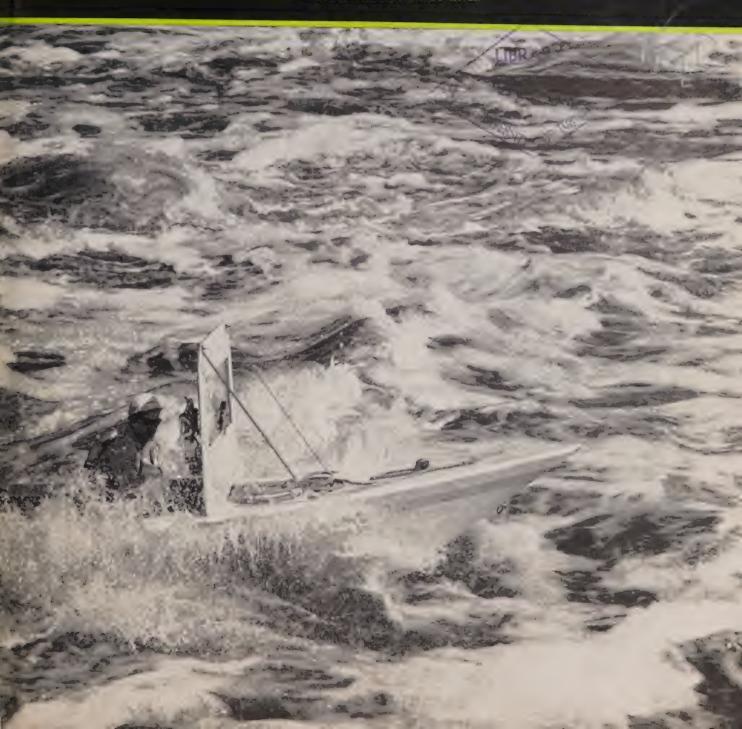
ONTARIO

HYDRO NEWS

OCTOBER, 1962

Generations-old Ottawa River boats join the jet age - see page 10. Other articles deal with

- · infra-red heating
- automation in operations
- gold medallion showcase
- · power from the atom
- water heater sales blitz





Loaded for bear, Hydro photographer Ted Johnson sets out to record progress at the Commission's Mattagami River developments. He stopped en route to shoot the new "jet-pointer" as it defied the rampaging waters soon to be harnessed. Our front cover, and pictures on page 10 and 11, testify to his prowess.



Does that finger pressing the Medallion door bell belong to a gas salesman? And what will happen when the good householder answers his summons to talk water heating? Can he be successful in a Medallion subdivision featuring fine electric living? Please turn to page 7 for the answers.

OCTOBER, 1962

ONTARIO HYDRO NEWS

CONTENTS

- 1 Has Hydro Got the Cure?
- 4 Automation in Operations (Part II)
- 7 En Garde
- 10 Workhorse of the Ottawa
- 14 Gold Medallion Parade
- 16 Nuclear-Electric Era
- 18 Man-Made Sunshine
- 21 Along Hydro Lines
- 25 Off-The-Wires

THE COVER

Plunging through the turbulent, foam-flecked waters of the Mattagami River, Tom Letang of Ontario Hydro's survey department gives the jet-powered Ottawa River "pointer" a real try-out. For further details of these historic craft and their strange marriage with the latest in marine propulsion, please turn to page 10.

THE COMMISSION

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Electricity may lend a hand in the future curing of Ontario's multi-million dollar tobacco crop.

With the per capita consumption of tobacco still mounting, Canada's massive cloud of tobacco smoke hides much of the leaf's importance to the economy of Ontario.

It's a strange, troublesome crop every step of the way from seed to curing.

The seed is so tiny that two ounces will sow more than 20 acres, yet, left alone, it would grow to nearly seven feet. It's a prima donna—you even sterilize the first soil in the greenhouse. Excessive rain hurts it, hail shreds it, frost kills it, thirst withers it.

Loving care and constant struggle

HAS HYDRO GOT THE CURE?





mark the growing of the 170 to 190 million pounds that, as a crop alone, bring \$95 to \$100 million—the most valuable single cash crop harvested in Ontario.

The harvest is short on time, long on work. Every year, thousands of workers invade Norfolk, Elgin, Brant and Oxford counties—and a few others—for the all-too-short harvesting season.

But curing the leaf! This threephase process just won't be rushed.

It takes six days. Frost, wind, fires and worker-trouble notwithstanding, the arrogant weed demands six days. That was Point One when Ontario Hydro's Western Region set out to cure tobacco electrically.

There were others to consider:

An average farm (of Ontario's estimated 4,400) has six kilns in which tobacco is cured.

With luck, the farmer has from August 1 to about September 15 to get the stuff off the plant (whose leaves mature progressively) and in and out of the kilns. If that first killing frost hits September 15, he has 45 days—and his kiln capacity leaves him no margin of safety. Even a few days' grace would be of immense value.

This is the problem Hydro's Western Region is trying to solve for the tobacco industry. Current experiments could well grant the farmer several days' grace by significantly increasing his kiln capacity.

Basically, it means getting more

leaf into each kiln, and Hydro has successfully cured one-and-a-half conventional kiln loads per kiln.

Curing involves hanging leaves by the butts of their stems in a kiln, which is a one-room insulated shed, applying heat and moving air so that leaves dry, change color and convert starch into sugar. Cured leaf should be lemon-yellow and high in sugar.

Most used now is a plain, high shed with gas or oil burners on the floor and an elaborate system of eight to 11 vents per kiln. Some use propane, and a few wood-and-coal systems are still in use.

Don Ramsey, Ontario Hydro's consumer service engineer in the Region, says the tobacco experiment is all part of a load-levelling plan: the more valleys you can fill in the graph, the better. The summer farm load is light—even out of proportion with the light urban summer load.

"Kilns would be a 24-hour load," says Regional Manager R. M. Laurie, who conceived the idea of curing tobacco electrically. "And there are about 25,000 kilns in this region. We haven't estimated the potential, but it's obviously great."

"So the general rule applies here," Mr. Ramsay added. "Where power or heat is needed, we find out whether

electricity can do it; do it more economically; do it better."

Tests began in 1961, with Art Marriage, a young B.E.Sc. en route to a Master's at the University of Western Ontario. First, in off-season, they dried lettuce and spinach—anything that involved getting water out of vegetation.

Full-scale testing was done this past season at the farm of Ernest Leitch in Dorchester township.

Two advantages were immediately obvious. Exact temperature control, a feature of electric heat, is vital; and falling leaves present a fire hazard where open flames are involved. Indeed, as designed by Mr. Marriage, the experimental kiln doesn't even have a hot element inside the kiln. This can't help but improve insurance rates. And it means that the leaf can come to within a foot of the floor instead of the present wasteful four feet. Too, curing means dehydration, and flames make moisture.

So electricity could do it. But what of cost?

First tries weren't inspiring. Then, late in September, the third batch was completed. The cost was estimated at 4.5 cents per 100 leaves compared to four or five cents by conventional means.

The Hydro team had taken a bold step—instead of 90 to 100 leaves per stick, they reasoned, why not up it to as much as a worker can handle? In the third batch, 176 leaves per stick was attempted. And it turned out about 95% saleable.

Sugar content was another problem. Cured leaf must be high in sugar, and it seemed, before analysis which is still to come, that the ex-



Tobacco leaves mature progressively, so each row (opposite page) is picked many times during season. Then expert hands tie leaves into sticks (below) for curing. Hydro team (bottom) is using electricity for curing. Regional Manager R. M. Laurie, centre, inspects leaf with farmer Earnest Leitch, left, and Art Marriage, outside experimental kiln. Device, left. records kiln temperature and humidity.





perimental leaf was too starchy to bring top prices. But lower quality is popular now for filter cigarettes.

"Sugar," Mr. Marriage reflected. "The only thing left to change was air velocity, so we cut it in half to 1,000 cubic feet per minute for the third batch. We'll actually sell it; that's the best test of market value."

Sitting at the edge of Hamilton Road about 11 miles from London, Hydro's experimental kiln looks much like any other except that it has two appendages-a fan and a heat-reclaimer with an exhaust fan.

It has none of the vents of conventional kilns which need constant manipulation, and there's little duct work. One tube across the top takes air in and down to the heaters. Normal convection currents take hot air to within range of the exhaust fan. There, the exhaust helps preheat incoming air through a layerdesign of 22 baffles, cutting heating costs substantially.

Built for about \$1,000, including labor, the kiln is 8 by 12 feet and 12 feet high. The plywood false floor, one foot above the insulated floor, has 2-inch holes at 9-inch centres (no ducts), and a squirrelcage fan forces heated air in under the false floor. There is but one damper to manipulate, and that is on the intake of the heat reclaimer.

The intake duct carries the partly pre-heated air past four 5-kw heaters. Their own thermostats are augmented by a limit-control unit.

The most significant outcome of the Region's tobacco curing experiments is the fact that 16,200 leaves were cured with a kiln which would handle only 9,000 leaves when heated conventionally. In addition to raising kiln capacity by more than 75 per cent, electrical curing promises to overcome farmers' labor problems and insurance costs while providing an extra margin of safety against the vagaries of nature. And there is a suggestion that electrical curing produces less impurities in the tobacco. A major tobacco processor is analyzing the experimentally cured leaf with this in mind.

By no means are the results final. There are many assessments yet to be made. But the harassed tobacco farmer may some day find that electricity is his staunchest ally.

PART II of a three-part series

DISTRIBUTION

To maintain efficiency of operation, and to handle the increasing complexity of modern transformation and distribution systems, Ontario Hydro has established control centres

in each operating region.

One such control centre is located in Leaside. Unlike similar centres in other regions, it does not have the same control over generating plants within Central Region that Hawthorne, for instance, has in Eastern Region. But this is mainly due to the fact that generation in the region is restricted to the huge thermal plants-R. L. Hearn and Lakeview—which are considered system rather than regional power sources

On the other hand, over one-third of the power used in the province is handled through stations controlled from Leaside, in the heart of Metropolitan Toronto. From here, operators supervise the flow of power to Metro Toronto's 12 municipal Hydro systems, 24 other municipal utilities, and some 45,000 rural customers through seven rural operating areas.

Over the years a majority of the transformer stations in the region have been automated or semiautomated, with travelling crews handling routine inspection and trouble calls from the key stations where they are based.

A major factor in the successs of this semi-automation of transformer stations has been the use of the "Jones" system, an arrangement whereby sufficient capacity is built into the station to allow other transformers to pick up the full load automatically when a transformer is removed from service.

While transformers are sometimes overloaded, the Jones scheme does

assure continuity of service and allows travelling crews to speed to the scene of the breakdown and effect repairs or, through switching, to balance the load on the remaining transformers.

At last count over half of the 23 Central Region transformer stations were on remote control, and it is expected that as more stations are added to this rapidly growing region, the percentages of unmanned stations will increase.

There are mixed feelings about the economic advantages of automation in municipal hydro systems. Boiled down to its simplest terms, automation is to all utilities a matter of dollars and cents, and the decision to automate is made on this basis.

In a highly developed area such as that served by the Toronto Hydro-Electric System, or in a relatively young but rapidly expanding utility such as Etobicoke Hydro, there is little doubt but what automation is not only feasible but highly desirable.

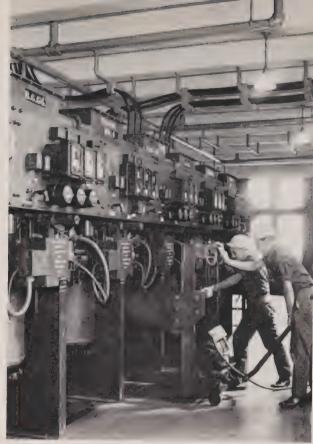
To other utilities, however, without such a density of customers, or with a large percentage of nonautomated equipment already installed, the thousands of dollars required to change each sub-station to remote control operation and to provide a control centre has been a major stumbling block.

In the case of Etobicoke Hydro, the decision to automate came early in the system's development when there were only four sub-stations. As a result of this and their recent addition of a new modern control centre, they now have one of the most modern systems in the province.

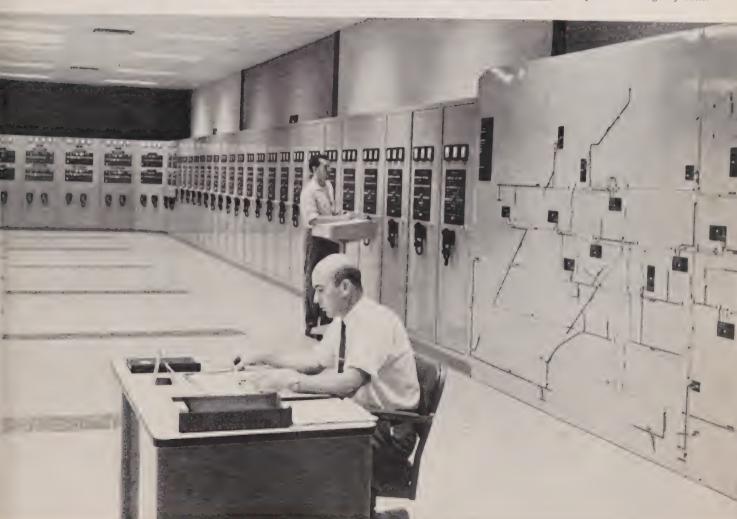
Operators on an around-the-clock basis keep close check on each substation in the township as well as

y Bob McDonell





From their control centres, municipal utilities radio instructions to mobile trouble crews who can often effect repairs without customers being aware of emergency. Etobicoke Hydro's modern control centre is shown, below, while, at left, Toronto Hydro trouble crews respond to emergency calls.



Next month, in the third and concluding article in this series, Hydro News examines system control as it exists and as it is likely to develop in the future.

those in the neighboring municipality of Long Branch, which is also operated from the centre. If trouble develops in a station, an annunciation system indicates the location and extent of the trouble on a large master control panel.

A crew is then despatched immediately to locate and correct the fault or to provide the necessary switching to by-pass the faulty station or section of line. In addition to trouble warnings, it is also possible to obtain voltage and amperage readings from each station by means of electronic telemetering equipment.

Service has now come to the point in Etobicoke and other automated systems where trouble is often located and service restored before the customer is aware there has been an emergency.

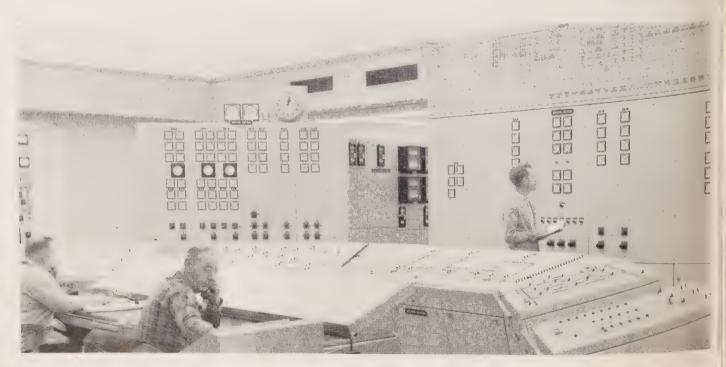
Non-automated systems rely on customer complaints to locate trouble, and this sometimes involves considerable delay, particularly if the fault occurs in off-hours-delays which can be costly to both the customer and the utility.

Automation also enables the local utility to control its power requirements at peak load periods by cutting off blocks of water heaters in sequence. Similarly, it can bring the water heaters back into service as soon as the primary load drops off. Thus, interruptions to the water heaters are kept to a minimum, yet the utility realizes savings because of the reduced billing peak.

For the future it is certain that municipal utilities will continue to automate as finances and circumstances allow. As well as control of transformer station, it is possible that, in the future, line switching may be controlled from a central point, enabling operators to isolate faults as they occur.

In addition, some utilities are studying the possibility of a central meter-reading system. One such system, now patented, makes use of the telephone. Using a special number, an electronic device is triggered which relays the meter reading back to a central point. The bill is then computed and sent out in the normal manner.

More than one-third of power used in province is handled through transformer stations controlled from Ontario Hydro's Leaside control centre, shown here. Majority of stations in Central Region are now automatic and serviced by travelling crews despatched through





When a substantial chunk of the water heater load in two large Medallion home subdivisions served directly by Ontario Hydro's Central Region was recently threatened by a door-to-door sales blitz launched by energetic natural gas salesmen, a vigorous sales counter-offensive was quickly mounted and pressed home by Hydro sales personnel with almost 100 percent effectiveness.

Why all the fuss over water heaters when there are so many other appliances and equipment the utilities can pick up for the asking?

One good reason is that electric flat rate water heating accounts for approximately 14 per cent of Ontario Hydro's and the municipal utilities' total residential retail revenue. Even more vital—flat rate water heaters represent 23.4 per cent of residential kilowatt-hour consumption. And these figures do not include revenue from a large and growing number of metered water heaters.

Add to this the water heater's extremely favourable operating characteristics, from the utility's point of view, and it represents a load so valuable that its loss would have a profound effect on the low rate structures now prevailing.

But winning and holding electricity's fair share of this essential market is not going to be easy, and

any notion that the Hydro salesman will be able to relax and watch the revenue roll in once the Medallion flag has been run up over a new subdivision was rudely jolted by the recent experience in Central Region. The competition never stops knocking on doors, and if the home has a Medallion doorbell-so much the

Bramalea subdivision, near Brampton, was the target of the gas company's first pin-point water heater sales blitz, launched last spring.

During negotiations with the developer, Central Region had agreed to install back-lot underground distribution and to provide an 800/800watt rental water heater for each home. As a final sweetener, the region undertook to pay the builder a \$35 installation allowance for each electric water heater.

In return, the developer agreed to conform with Medallion standards. When some potential homeowners expressly requested gas water heaters, the developer spelled out in "offer to purchase" forms that electric units would be installed. And to assist real estate personnel, Central Region sales staff explained the electric water heater rental plan in detail.

Even then, some 20 per cent of Bramalea's 687 homes fell to gas water heating before occupancy. And the worst was yet to come.

In a single three-week period, Brampton Area Office received 18 written requests to have electric water heaters removed to make room for gas units. Salesmen for the competition had blanketed the subdivision, selling water heaters doorto-door. And gas company employees living in the area, displaying commendable company loyalty, spent evenings and weekends helping their salesmen.

Immediate action was needed to stem the tide. Investigation soon showed that much of the competition's success was due to the fact that the recovery rate of the original units was inadequate to meet the requirements of some of the customers.

Working in close co-operation with the residential sales department, the regional sales staff received immediate approval of a water heater bonus block rate, as well as a reduction in rental charges for 40-gallon units from \$2.00 to \$1.75 net a month. The low bonus block rate for metered water heaters made it possible to install a fast-recovery 1,000/3,000-watt unit in every residence at a cost comparable with the original units. The rental charge matched the competitor's rental rate.

The water heater bonus block rate allows a rural-residential customer with an approved electric water heating unit to use up to 400 kilowatthours at .72 cents net per kilowatthour. Any portion of the block not used for water heating can be applied to other uses at the same favourable

It is worth noting here that several municipal Hydro utilities have negotiated with the Commission for

What happened when the competition began ringing doorbells in two Medallion home subdivisions underlines the value of the water heater load and suggests how it can be defended.



Some of the Ontario Hydro personnel who teamed up to stop the Bramalea and Bay Ridges gas water heater sales blitz, stride purposefully from a meeting of strategy. Bonus block rate and fast-recovery units were their hole cards in door-to-door counter offensive.

imilarly attractive bonus block rates n order to stimulate their own water leater sales programs.

Armed with this heavy artillery, a eam of six Hydro sales representatives knocked on more than 300 Bramalea doors and talked to 290 f the 303 customers with flat rate lectric water heaters. Advance notice f the visits, together with details f the new offer, had been sent out rior to the week-long blitz.

And it worked. While many cuspomers were satisfied with the oper-

ation of their present units, no less than 180 accepted the bonus block rate and had fast-recovery elements installed.

In the eight weeks following the blitz, only one request to remove an electric water heater was received.

Just one month later, a serious rash of requests for the removal of electric water heaters broke out in Bay Ridges, a subdivision three miles east of Toronto served by the Markham Area Office. The symptoms were the same, and, again, the cause was traced

to inadequate recovery performance of the 800/800-watt elements.

Quickly diagnosed, the trouble was cleared up with a stiff dose of the same medicine which had been administered so successfully at Bramalea. This time, of the 108 customers who had definitely decided to change to gas, 83 were persuaded to retain their electric water heaters.

As a result of these two experiences, and from a careful study of the water heater scene over the last few years, Hydro sales personnel are convinced that there is no substitute for personal contact in dealing with customers. It has also become evident that, in many instances, low wattage flat rate units are no longer adequate to meet the steadily increasing hot water requirements of the modern family.

And the 1,000/3,000-watt units, combined with the special bonus rate, side-step the need for tailoring each installation to the requirements of the individual customer. The combination spells plenty of hot water, fast recovery and competitive costs,

As one sales representative expressed it, "no amount of talk at the builder or contractor level will sell a customer who has been forced to take a cold shower because his water heater was slow on the comeback". And this salesman would like an assist from well-informed and enthusiastic fellow employees who can do a lot for the electric water heater cause in their neighbourly chats over the back yard fence.



WORKHORSE OF THE OTTAWA

A new concept in transportation is being tested by Ontario Hydro survey crews on the swift and shallow rivers of the James Bay watershed.

Combining generations-old boat design with ultra-smooth jet propulsion, the Cockburn boat-building family of Pembroke, Ontario, has produced a marine workhorse which the Commission's Hydraulic Engineering people have found to be a great improvement over the propeller-driven boats previously employed in river work.

The new boat will help perpetuate a craft which has been associated with life on the upper Ottawa since pioneer days. It is a direct descendant of the oared "pointers" which generations of Canadian loggers and rivermen have immortalized in song and story. The picturesque craft owe their nickname to their unique design—prior to the introduction of motor-driven versions, both bow and stern came to a long, sharp point.

It was as a result of a continual quest to improve field operations by those who must explore Ontario's rivers for new sources of electric power that the pointers caught up with the jet age. Hydro representatives suggested to the Dowty Turbocraft people that their marine jet propulsion unit in a Cockburn pointer should

make an ideal combination for site exploratory work. A prototype was built and, after a fine performance in extensive tests, a boat was built to Commission specifications.

To veteran boat-builder Jack Cockburn, the jet adaptation promises to breathe new life into this third generation family business.

It was his grandfather who designed the first pointer a hundred years ago, and the firm uses the same patterns today in making work boats for lumbering operations throughout Canada. Square stern adaptations to permit the use of conventional outboard engines have also been popular for years.

The origin of the pointer is directly associated with the history of the Ottawa River.

By the 1850s, much of the mast and square timber market of the Royal Navy was disappearing, as were the trees to supply it. To the lumbering barons of Ottawa, and the hardy lumberjacks who depended on the great log drives for their livelihood this could have been disastrous.

However, about this time a market for first quality pine and spruce lumber was developing in the United States. While the Upper Ottawa was rich in these timbers, a new method was needed to get the logs to the mills. The huge rafts of earlier years were not a suitable method of handling the smaller logs.

A fortunate meeting of the man who had a contract to roof the new parliament buildings in Ottawa, J. R. Booth, and John Cockburn, an



by Bob McDonell

Immortalized in song, story and on canvas, the picturesque Ottawa River "pointers" are joining the jet age.





Pembroke boatbuilder Jack Cockburn, top photo, feels unaccustomed surge of jet power as he takes wheel of one of his pointers. Centre photo shows Engineering Topographer Tom Letang heading Hydro's jet pointer into turbulent stretch of Mattagami River where Kipling G.S. will be built. Cruising under load, lower photo, Hydro's propellerless workhorse hugs shallow shoreline.

English wood-carver who was brought from England to do much of the ornate woodwork in these buildings, resulted in the design of a new boat—the pointer—which was ideal for lumbering and later pulpwood work on the Ottawa.

On the job, the pointers carried crews of six to ten men who rowed them around the shores of the rivers, streams and lakes sweeping logs and pulpwood into booms in which they were floated downstream to the mills.

The original Cockburn pointers were built in Ottawa, but transportation of the large boats—some of them up to 50 feet long—up the turbulent river was a major operation in the days before railroads and highways. As a result of J. R. Booth's urging, Mr. Cockburn transferred his business to Pembroke, some 80 miles upstream, in 1866. Since then, over 50 workboats a year have been turned out by the family.

To Ontario Hydro, an adaptation of the original pointer—the Cockburn-built "Hydro Special"—has been an important factor in the exploration and construction of hydraulic sites and plants throughout the province.

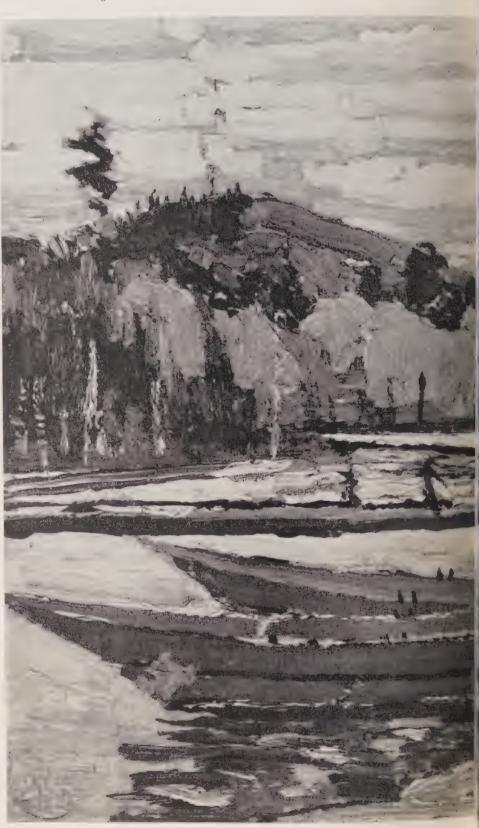
First used during the construction of Abitibi Canyon Generating Station, the boats figured in a dramatic rescue operation when the collapse of a bush road bridge marooned almost 100 construction workers.

While the Cockburn plant went all out to complete five pointers, a flat car and engine stood ready to carry them to Cochrane for the transport of supplies to the stranded crews. Within days the bridge was replaced and the square stern boats returned to their more prosaic tasks of transporting men and materials about the site.

Since then, Cockburn boats, powered by outboard motors, have been the water workhorses at almost every major Ontario Hydro hydraulic investigation and construction project, reaching a climax at the Robert H. Saunders - St. Lawrence project when 54 were used.

Although Hydro, lumbering companies and others interested in northern development provide the biggest markets, the boats have

"Bateaux" by renown Canadian artist Tom Thomson depicts Ot



er pointers — leading figures in the romance of a great river.



been pressed into service on some unusual projects.

During the Boer War, the Cockburn plant became a hive of activity to keep up with the demand of the Canadian Expeditionary Force, which found the pointers ideal in the veld countryside of South Africa.

Others have provided river transportation for exploratory expeditions into the interior of South America, Asia and Australia.

Main features of the Cockburn pointer and its motor-driven counterpart, the square stern freighter, are seaworthiness, shallow draft, stability, ruggedness, and ease of handling.

Although modern power machinery streamlines production to some extent, fitting and assembly is still strictly hand finished. Unlike carpenters, boat-builders work with angles rather than squares, and it is the unique shape of the Cockburn design, plus top quality pine and cedar which has given these boats an excellent reputation.

The addition of jet propulsion. largely confined to pleasure craft and cruisers in the past, has extended the range of motor-driven versions of the pointer. Drawing less than a foot of water fully loaded, the jet boats, without propellers, can operate in shallow water and rapids, hitherto inaccessible to all but oared models. And they are extremely maneuverable.

As a bonus, the propulsion unit—a high speed pump which jets a stream of water out the stern—can be readily converted into a high-pressure pump for fire-fighting.

The Hydro jet pointer serves as an excellent sounding boat, and is a safe and speedy personnel and supply carrier. It can travel up to 24 miles per hour, and has a load-carrying capacity of 6,000 pounds.

Currently probing the Mattagami River downstream from Little Long, the jet has already proved itself a worthy descendant of a proud line of river boats.

Hydro engineers, geologists and surveyors are betting that the "Workhorse of the Ottawa" will become the "Moose River Express" and a familiar sight on other rivers and lakes of the north for a long time to come.

AUTUMN PARADE OF GOLD MEDALLION HOMES



Suburban Builders proved Gold Medallion living is within price range of average family with this attractive Swiss chalet-type home, near Keswick.

Priced at only \$13,500, it is electrically heated and meets all other Gold Medallion requirements of power, appliance and light-conditioning.

All-electric living, including complete electric home heating, is capturing the public's imagination, if response to Hydro's Gold Medallion Showcase during the first few weeks is any indication.

Since September 7, a total of 26 all-electric homes throughout Ontario have been open to the public, and the number of visitors in many areas has far exceeded expectations of participating municipal electrical utilities, building contractors, and Ontario Hydro.

The first Showcase weekend saw hundreds visiting many of the homes on display, and more than 2,000 visited at least one home. The sixweek open house period was selected to coincide with the peak home-buying period of the year, as well as with National Home Week, September 15-23.

Early in the campaign, participating builders were already reporting sales of all-electric homes which they could trace directly to the Showcase promotion.

Gold Medallion homes on display range in size and design from a storey-and-a-half model selling for \$13,500 to spacious split-level and ranch-style bungalows with price tags up to \$50,000. Regardless of the price, all the homes are electrically heated, and meet Gold Medallion standards of power, appliance and light-conditioning.

Of all the homes in the glittering Showcase, the relatively modest Swiss chalet type located in Keswick, on the southeast shore of Lake Simcoe, is, perhaps, among the most significant. Priced at \$13,500, the three-bedroom home, featuring an attraction

tive exterior of stained pine and field stone, is proof positive that allelectric living is available to the average Ontario family.

Inside, the basementless home combines beauty with effective use of its 1,150-square feet of floor space. A combined living-dining area stretches across the front portion, and the kitchen is connected to the dining area with a well-lighted pass-through counter. Also on the first floor is a laundry room, bathroom and master bedroom. Two bedrooms and a washroom are on the second floor.

Constructed by Suburban Builders, the home's unusual design and variety of electrical applications has already attracted a lot of attention.

As Don Holstock of Suburban Builders puts it: "I've had electric heating in my own home for three years, and I'm convinced it's the only way to heat a home. The turnout we've had so far during Gold Medallion Showcase has convinced me that the general public is very interested in all-electric living."

And if there is a tendency in the public mind to associate electric heating with the carriage trade, his company's Swiss chalet on the shores of Lake Simcoe will go a long way owards correcting the situation.

By October 21, when the Showcase closes, tens of thousands of people hroughout Ontario will have seen a Gold Medallion home for themselves. The effect of such wide-spread exposure to the advantages of all-lectric living is incalculable.

To paraphrase an old Chinese roverb: One Gold Medallion home n display is worth more than a nousand words.



Showcase homes include twostorey model, left, by Schickendanz Brothers, in North York. A heat pump provides year-round climate control. Floodlighting accents ranch-style home, below, built in Brampton by T. Campbell Construction Ltd., and splitlevel "bungalow", bottom, by I. Vanderhide Construction, in Sarnia. More than 2,000 visited Sarnia home on first weekend.







FOR CANADA IT'S

YEAR 1 OF THE NUCLEAR ELECTRIC ERA

Now it's official: Canada has entered the nuclear age of electric power.

Canada's first nuclear-electric generating station, which began producing power from the atom in June, was officially opened late last month. At the ceremony, Gordon Churchill, chairman of the committee of the privy council on scientific and industrial research, handed the key to NPD's master control room to Hydro chairman W. Ross Strike—symbolic of the fact that Ontario Hydro is now operating the station.

Situated near Rolphton, Ontario, about 140 miles northwest of Ottawa, the \$33 million development is a joint project of Atomic Energy of Canada Ltd., Canadian General Electric, and Ontario Hydro.

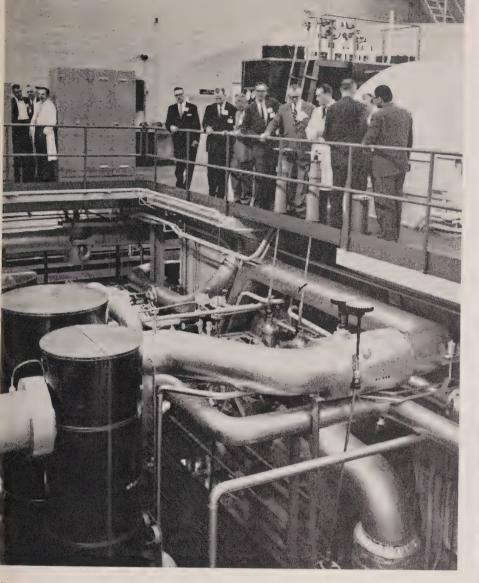
The NPD ceremony was a historic occasion in Canada's program to harness the atom for peaceful purposes, and was attended by more than 200 guests: representatives of the three partners in the project, exec-

utives of power companies from across Canada, and officials of nuclear energy organizations of several countries, including Australia, Italy, Japan, Sweden, the United Kingdom, and the United States.

The foreign visitors illustrated the world-wide interest in the Canadian reactor system. NPD is the world's first nuclear power station to use the combination of natural uranium as fuel with a reactor moderated and cooled by heavy water.

Acknowledging the significance of nuclear power for Canada, Mr. Churchill also pointed out that "no effort will be spared to promote sales abroad of Canadian nuclear power plants." (The Indian government recently announced it would build a 200,000-kilowatt Canadian-type nuclear plant, provided that satisfactory arrangements can be made with Canada.)

Another speaker, Ian McRae, c.G.E. board chairman, said "NPD has con-





Ontario Hydro Chairman W. Ross Strike, opposite page, turns NPD's master control key prior to official opening ceremonies. Photo, top left, shows visitors touring plant on opening day. Present at the opening ceremonies, distinguished group, above, includes, left to right: L. J. Gray, president, A.E.C.L.: Ontario Premier John P. Robarts: Leslie M. Frost, former premier; Ian McRae, board chairman, C.G.E.; Gordon Churchill, Federal Government representative; and W. Ross Strike.

irmed Canada among the world eaders in nuclear technology."

John P. Robarts, Prime Minister of Ontario, referred to "a growing eeling among many Canadians that ... all segments of our national and provincial life must drastically alter heir concepts of co-operation and urb their divergent self-interests if we are to meet national goals and ontinue to grow and prosper. Surely ere is concrete and gratifying proof that Canadians are capable of that eccessary spirit of co-operation."

Mr. Strike and Lorne Gray, presient of A.E.C.L., paid tribute to the team of dedicated people" who orked on NPD. "Today we take our ats off to the scientists and engineers ho brought NPD to reality," Mr. rike said.

Mr. Gray had special words of raise for Ontario Hydro's operating aff: "The Commission has gathered at trained a first-class crew to opere NPD, and the speed with which

it has been brought into operation from date of criticality reflects the very fine work done in prior months and the excellent collaboration among the operators, the designers, and the staff of A.E.C.L. from both Toronto and Chalk River."

NPD was built to demonstrate the Canadian-designed reactor system, and to provide information on a full-scale station which is now under construction at Douglas Point on the eastern shore of Lake Huron. Although it will not produce electricity at a competitive cost, its 20,000-kilowatt capacity is enough to supply a community the size of Barrie or Pembroke.

With the rugged Laurentian Hills as a backdrop, NPD stands as a milestone of progress for Canada and the electrical industry. It also symbolizes what Premier Robarts called two of this country's greatest natural resources — human co-operation and ingenuity.



man-made sunshine

by Joan Allen

Photo, right, shows Grant Webber and Mel Alderson of Ontario Hydro's Farm Sales Department testing output of infra-red radiant heating units in all-electric milking parlor. Other photos show people window shopping, worshipping and watching events at London's Western Fair grandstand—all warmed by the infra-red rays of the "people heaters".









Don't look now but the infra-red people-heaters are on the march. And nobody is worried—least of all, the electrical industry.

Second cousins in name only to the carnivorous purple people eaters, infra-red heaters are warming the very hearts of many Ontario residents. In fact, heating people, and things, is what these heaters do best, and more and more of them are being installed in commercial establishments, in industry and on farms. Their application seems limited only by the imagination.

The principles of infra-red heating are simple, and can readily be understood by anyone who has completed a post-graduate degree in physics and spent a life-long apprenticeship in the laboratory!

It seems that infra-red rays, which are situated beyond the red end of the visible spectrum, travel in waves somewhat similar to light, at a speed of 186,000 miles per second. Every heated object, such as a lamp filament or an electric element, emits infrared rays, but the secret of heating, apparently, is in the wave length—and this depends upon the temperature of the heated object.

By absorbing a certain portion of the energy carried by the infra-red rays which strike it, any substance will heat up. Each substance has one or more wave lengths of absorption which will cause a maximum increase in the temperature of the substance. To heat people efficiently, the people who make people-heaters tell us, the source of infra-red radiation must emit rays with wave lengths which correspond as closely as possible to the wave lengths of absorption of the human body.

In other words, infra-red rays are like the rays of the sun. They do not heat the air through which they travel, but only the persons or objects they strike. Heating by this method involves directing the high-temperature rays from a fixture designed to control and project them onto a specific areato warm people and surfaces indoors and out; to keep areas free of ice and snow, and for industrial heating and drying processes.

Several types of infra-red radiant heating fixtures ure in general use, including metal sheath heaters, quartz tubes, quartz lamps and gas units.

A metal sheath heater will contain one or more tainless steel sheathed heating elements, similar to he surface elements of an electric range, but much arger in diameter and straight, rather than coiled. This type emits a dull red glow, with no glare even t maximum voltage, and is extremely rugged.

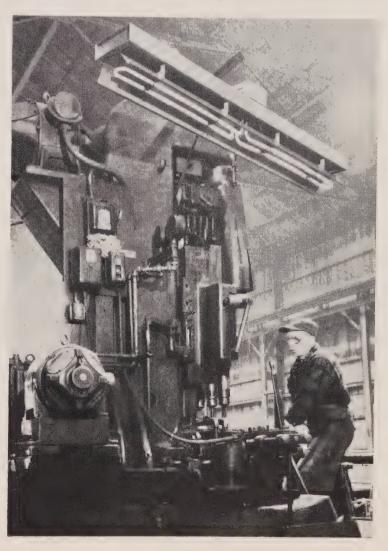
The quartz tube type consists of a coiled element n an unsealed quartz tube. Its primary advantage s flexibility, since it can be matched easily to heat, oltage and length requirements. It, too, has low iminosity, but it heats up much faster than the

reath type.

Highest radiation efficiency (amount of heat idiated per watt input) is attained by the quartz imp type of fixture. It consists of a coiled resistor 1 a sealed quartz tube which is filled with an inert, ow-pressure gas. It is suitable for outdoor use, and nce it has a light output of about six to eight

Infra-red rays heat people and objects instead of the air.

Ideal for heating specific areas of large buildings where it is impractical to heat vast volume of air, infra-red heat can be beamed at single operation or section. Here, metal sheath panel keeps machine operator warm in huge unheated steel mill.



lumens per watt, the quartz lamp is a combination

heat-light source.

Infra-red gas units are suitable for certain specific applications. Because they consume oxygen and emit combustible products which must be vented to the outside, they are impractical for many locations.

Conventional space heating systems keep people warm by heating the air surrounding them. Obviously, then, infra-red heating is ideal in places where it is impractical to heat vast volumes of air. It is made to order for keeping people comfortable in specific areas of large and drafty buildings. The office staff in one corner of a warehouse, or machine operators scattered at isolated stations throughout a factory, are perfect targets for these artificial sun-

By the same token, infra-red heating will keep large groups comfortable in auditoriums, arenas, stores and grandstands without raising the temperature of the air around them. This represents a great saving in energy expended and eliminates the time lag associated with conventional heating.

In London, Ontario, a total of 190 quartz tube infra-red heaters was installed last fall at the Western Fair grandstand in Queen's Park. The first installation of its kind in Canada, it consists of 100, fourkilowatt units and 90, three-kilowatt units arranged in banks above 6,000 seats. To keep down the peak load, the heaters switch on and off in alternate banks.

The wedge-shaped open ends of the grandstand were glassed-in to reduce the effects of wind.

Canada's first all-electric bowling alley opened in Collingwood last winter. In the Collingwood Bowl, a 10,000-square-foot area is heated electrically with a combination of infra-red radiant heaters and convection baseboard or fan-forced heaters. Five, two-

This year, spectators at hockey games in Stamford Memorial Arena will bask in comfort of infra-red heat. New rink installation consists of 56, 4-kilowatt heating panels positioned so as to leave ice surface unaffected. Economy and long life are other attractive features of this type of heating.

kilowatt infra-red radiant heaters are mounted above the benches in front of the alleys to keep bowlers comfortable and warm between frames. The remainder of the building, including a restaurant, is heated with electric convection heaters.

Many Ontario hockey fans now watch their favorite sport while basking in the comfort of infrared heat. This form of heating is particularly suited to rinks because the heat rays can be aimed directly at the spectators without affecting the ice. Properly engineered, these installations can be operated very economically.

And outdoors, infra-red heating holds all the aces. Conventional methods are obviously useless in the wide-open spaces where infra-red rays are being used to warm window shoppers and heat such areas as patios, transit platforms, service station pumps, hotel porticos and drive-in restaurants.

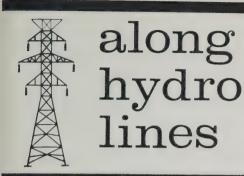
Infra-red heating is equally at home down on the farm. In milking parlors, the units, directed at the milking equipment operator, will keep him warm without over-heating the cows, which return shortly to the cold outdoors. Infra-red heaters will keep new-born pigs, lambs, calves and chicks warm, protect workers' hands from frost-bite at loading ramps, and keep the farmer comfortable in his workshop, often located in an unheated implement shed.

In industry, infra-red heating has innumerable applications other than heating people. Infra-red ovens are used to dry new paint on auto bodies, one of the first uses of infra-red heat; to dry glues and paint on a variety of products; and to thaw frozen coal and ore prior to dumping from open railroad

Even apples can be peeled in infra-red ovens. Steam is formed immediately under the skin, which explodes and falls off. The apples are cooked to a depth of only four millimetres.

New applications of infra-red rays are being discovered day by day, and the people heated by people heaters are warm in their praise.







Electric Heating Group Meets

Ways and means of developing the electric heating market were thoroughly explored by some 400 delegates to the third annual meeting of the Electric Heating Association of Ontario, held recently in Toronto: Discussion ranged from marketing and rates to installation, standards and inspection.

By the end of 1962, it was revealed, the number of electrically heated homes in the province would approach 3,500. Development of commercial applications of electric heating had been even more satisfactory. The apartment field was so promising, delegates were advised, that the extension of the Triple Seal Standard to cover this type of dwelling would have to be considered.

As chairman of the Association, Gordon E. Marshall reviewed E.H.A. objectives, technical activities, research and promotional programs. "Customer satisfaction is, however, our primary objective," he said. "We must make sure our customers are satisfied, and, if they are, this industry will continue to grow, and to grow at a very healthy rate."

On the subject of cost, W. L. Scott, home heating sales officer, Ontario Hydro, pointed out that many electrical utilities now have heating rates in the one cent and 1.2 cent range. He said this would enable the utilities to prove to prospective customers that their total heating costs would be actually less than oil or gas heating if electric heating equipment was installed to Triple Seal Standards.

Ray Pfaff, manager, St. Catharines P.U.C., was elected president of the Association for 1962-63. He is shown at the left of the photograph with Gordon Marshall.

O.M.E.A. President Lauds Public Speaking Contest



Reviewing the year's activities at the annual fall district meetings of the Ontario Municipal Electric Association, President P. R. Locke lauded local utility commissioners for their support and participation in the Ontario Public Speaking Contest, co-sponsored by Ontario Hydro and the Ontario School Trustees and Ratepayers' Association in conjunction with the Ontario

Educational Association.

This year's prize-winning address, "We Need A World Parliament," was so outstanding, Mr. Locke said, it made one feel proud to be associated with Hydro in this province-wide contest.

The address was delivered by 13-year-old Frank Pollard, of London, elementary school champion.

A little push in the right direction is sometimes all a youngster needs to start on the path to leadership, Mr. Locke continued. This type of training could well be the starting point. The contest's success could be gauged by the growth in the enrollment—from 5,000 in 1958 to over 200,000 this year.

"I do not know of any promotional project where we can create more goodwill among Hydro customers, or where we can make a greater contribution to society, than by providing the opportunity for our young people to establish confidence in themselves —to think on their feet—and to master the art of self-expression."

Joint Use of Poles Saves Time and Money

A new and more satisfactory agreement has been reached between the municipal electrical utilities of Ontario and the Bell Telephone Company of Canada concerning the joint use of poles.

Drafted last year by a committee of the A.M.E.U. and telephone company representatives, the new agreement lays down specific conditions and is deemed to be more efficient and workable than agreements previously in force. Details of the agreement, accepted last December by the A.M.E.U.'s Engineering Board and Bell Telephone, were sent to the municipal utilities earlier this year.

Preliminary figures for 1961 show that 310 Ontario utilities share some of their poles with the telephone company; 59,000 telephone poles carry Hydro lines; and 95,000 utility poles carry telephone equipment. In addition, Ontario Hydro has an agreement with the Bell Telephone Company, and thousands of poles owned by the two organizations carry each other's lines

Pole-sharing has a number of mutual benefits. Capital construction costs can obviously be greatly reduced where one set of poles can be used to carry parallel Hydro and telephone circuits. Joint use also cuts down on the costly business of brush-cutting

and spraying. And there is the aesthetic advantage of a single line of poles in place of two, especially in urban areas with cluttered skylines.

Joint pole use, where the "tenant" pays a rental to the pole owner, goes back almost to the beginning of Hydro in Ontario. Between 1917 and 1934, individual agreements were written in each case where joint use was contemplated and there were no standards. This sometimes resulted in hazardous line construction and accidents. The first comprehensive agreement between Ontario Hydro and Bell Telephone was signed in 1937, and this was used by municipal utilities as a guide.

The present agreement incorporates revised standards specifically designed to utility requirements. Defects in earlier agreements have been overcome, and the pact contributes to improved line co-ordination and work simplification, while reducing time-

consuming negotiations.

Burlington P.U.C. Opens New Centre



With a snip of the electric scissors, Ontario Hydro Chairman W. Ross Strike cuts the ribbon to officially open the handsome new administrative building and service centre of the Burlington Public Utilities Commission. Mayor O. F. Mullin, left, watches as P.U.C. Chairman N. R. Craig assists with the ribbon.

Ceremonies were held earlier the same day, October 5, to mark the opening of a major addition to Burlington's water purification facilities. Luncheon guests of the P.U.C. on this memorable occasion included Hon. John P. Robarts, Prime Minister of Ontario; P. R. Locke, President of the O.M.E.A. and A.M.E.U. President Ronald Harrison.

A more complete report of the event will appear in the November issue of *Ontario Hydro News*.

Data Processing Speeds New Appliance Survey

With a helping hand from Univac II, Ontario Hydro's Marketing Research Department is once again counting electrical appliances throughout the

The appliance survey—a follow-up to the initial one in 1960—will be processed and analyzed entirely by Hydro's electronic data processing equipment. Univac II will cut production time by some 75 per cent, compared to the first survey.

Questionnaires have been streamlined to about one-third their former size and deal, for the most part, with major appliances. They are designed, as well, to reveal changing patterns in equipment use in certain areas.

Some 120,000 questionnaires are being mailed both to customers served directly by Ontario Hydro, and those who receive their power requirements from some 160 municipal utilities which are co-operating in the survey.

L. V. Skof, Marketing Research manager, expects to have a preliminary report on the survey results in time for the annual O.M.E.A. - A.M.E.U. convention in March, 1963, and a final report later in the spring.

Future plans call for a comprehensive appliance survey about every five years, and shorter surveys every two years.

P.U.C. Chairman Dies at Bowmanville

Frederick M. Vanstone, prominent Bowmanville businessman and Chairman of the Public Utilities Commission, died recently. He was 49 years of age.

Mr. Vanstone became P.U.C. Chairman in January, 1962, upon the retirement of veteran Commissioner Milton Elliot. He had been a commissioner since May, 1961, and, as mayor of Bowmanville in 1953 and 1954, he had been a member of the P.U.C.

A life-long resident of the community, Mr. Vanstone is survived by his wife, the former Jean McCormick; two daughters, Helen and Barbara; and a son, Frederick. He is also survived by his parents, Mr. and Mrs. F. C. Vanstone, and by two brothers and a sister.

PRESS COMMENT

With NPD now officially in service, and construction well advanced at Douglas Point, site of Canada's first full-scale nuclear-electric station, the eyes of the world's power authorities are turning more and more to this country's approach to nuclear power development. The following editorial comment draws attention to the trend:

Ottawa Citizen

"The interest shown by the Indian and Pakistan governments in Canadian-designed atomic energy plants for the production of electricity constitute partial vindication of Canada's atomic energy policy Full vindication will come with final agreement to use the Canadian design.

"Only two or three years ago Canada's atomic energy policy was under attack because this country had decided to use heavy water and natural uranium in its reactors. It was being argued that this was mistaken policy, and that processes being developed in other countries would leave Canada far behind But if an export market opens up for Canadiar designed reactors, the critics will be confounded."...

Peterborough Examiner

"The decision of the Indian Government to buil a 200,000 kilowatt nuclear-powered generator (Canadian design (subject to satisfactory financia negotiations) is a compliment to the Ontario team which has worked so closely and successfully together—we refer to the Civilian Atomic Power Department of Canadian General Electric here in Peterborough, Atomic Energy of Canada Limited, and Ontario Hydro. These three organizations combined their resources to develop a nuclear generating system employing natural uranium for fuel and heavy water for cooling and heat transfer. Their design may yet prove to be the most practical and economical for commercial production of electricity. Even in Britain and the United States, where vast sums have been spent on similar development, interest is increasing in the Canadian design."...

Walkerton Herald Times

Canada's nuclear power industry reveals quite a number of things which can be summed up into one word—prestige. The eyes of the world are on what is taking place in Canada, and the main reason is that people of other countries think Canada may have the secret of low-cost power."...

Forest Hill Hydro Veterans



Two popular members of the Forest Hill Hydro System were among a group of municipal employees recently honored upon attaining a quarter century of service. They are Alex (Scotty) Hamilton, superintendent, shown at left in the photograph, and Jack Eakins, centre, line foreman. Council Chairman D. H. Milnes is making the presentation. Mr. Hamilton had served with Ontario Hydro for 23 years prior to joining the Forest Hill utility.

emote-Control Meter Reading rousing Utility Interest

Automatic reading of residential electric and gas meters by telephone circuitry is now being field-tested in an area of Michigan. In addition to providing the circuitry, the telephone company engaged in the trial will house the meter-data receiver in its central office. The electric supply utility will install meter reading terminals and connect them to the modified electric meters being employed.

And, according to a recent Canadian Press dispatch, the Consumer's Gas Company is testing a similiar method in Ontario to read the meters of large volume users in Welland, Gananoque and Rexdale. The three plants chosen for the trial range from 15 to 200 miles from a central reading point in Toronto.

MUNICIPAL BRIEFS

Preston P.U.C. plans to build a truck and material storage building on utility owned land at an estimated cost of \$33,000. The structure will measure 82′ x 40′ and will be heated electrically.

Sudbury Hydro has been cited as an example of what can be achieved in the field of electric heating by live-wire promotion. In a speech prepared for delivery at the recent annual meeting of the Electric Heating Association, Gordon McHenry, Ontario Hydro, noted that 82 of the 160 electric heating installations made in the Northeastern Region in 1961 were in Sudbury. He said this amounted to better than 15% of all the homes constructed in the city in that year. "The load-building possibilities with electric home heating are very great," he said, "provided we can find some way to develop local selling activity on the part of the municipal utilities on a scale similar to that mounted by Sudbury H.E.C."

Me... A Shareholder? is the title of an informative and attractive booklet produced by the Guelph Board of Light and Heat Commissioners to enlighten its customers with regard to the constitution of Hydro in Ontario and to acquaint them with the various services available from the Board. Among the subjects discussed in the 20-page, illustrated brochure are: rates, electric home heating, lighting, water heating, and wiring finance. "Why you should use electricity", "What you should know about your electrical service" and "In case of trouble" are other sub-headings.

Hespeler Hydro will separate its operations from those of other boards and commissions on or before the 31st of December. The Hydro Commission is proceeding to secure staff and accommodation, and is arranging adjustments where joint ownership is involved.

Peterborough P.U.C. is making alterations to its engineering building to accommodate a new billing office. The utility is switching to an automated billing system.

Sarnia Hydro, on the recommendation of Chairman John T. Barnes, has decided to equip all its cars and light trucks with safety belts. At Ontario Hydro, seat belts are being installed in passenger cars and light trucks on a progressive basis. Belts will be installed in larger trucks and service vehicles as experience dictates. There are approximately 2,000 vehicles in the Commission's transport and work equipment fleet.

Ceremonies to mark the opening of the \$300,000 Eby Rush high voltage transformer station are being planned by Waterloo P.U.C. for late November. Ontario Hydro Chairman W. Ross Strike will be asked to participate.

Port Credit Hydro will provide power at a special rate of .75 cents net per kilowatt-hour for the electric heating service of a 76-suite apartment building that will be supplied on an off-peak basis. The heating system will consist of two-part heaters to be installed in each suite—one part being a normal resistance unit and the other a thermal storage cell. Both the electrical supply to the resistance units and to the storage cells will be interrupted during peak load periods.

Leamington P.U.C. plans a service building at an estimated cost of \$45,000 for the Hydro and Water divisions. Construction of the 5,700-square-foot building is expected to commence this year.

Underground distribution was the chief topic of discussion at a recent meeting of the Stratford P.U.C. at which it was agreed that a standard charge of \$100 per lot would be made for underground services in new and established residential districts. Manager D. M. Seath explained that this represented about half the actual cost. An extensive program of underground distribution in the downtown area is also being considered since many of the sidewalks are due for replacement and economies could be effected by combining the two jobs.

Port Dover P.U.C. is raising service deposits from \$10 to \$15 for new domestic customers, while commercial customer deposits will jump from \$10 to \$50. The changes are being made because of the number of customers leaving town with outstanding Hydro bills in excess of their deposits.

Saltfleet Township is moving ahead with plans which could result in a new municipal hydro system. The township plans to take the question of purchasing the system to the voters in December if Ontario Hydro can complete a system inventory in time.

Woodstock P.U.C.'s handsome new headquarters has been effectively floodlighted to maintain its visual effectiveness after dark.

What happens when too many appliances and other electrical equipment are left at the "on" position after a power outage was demonstrated in Brockville recently. Taking advantage of a cut-off carried out by Ontario Hydro in the rural area to effect some of its own work, the utility was called back into action twice after power was restored—due to blackouts occasioned by power surges.

Beards are the order of the day in Fort William, where even police and P.U.C. stalwarts are sporting them. It's all in preparation for the local winter carnival.

Etobicoke Hydro plans to supply power for heating houses and apartment buildings during construction (subject to a six-month maximum) at a discount of 25 per cent off the standard temporary service rate, providing the living units are to be electrically heated

upon completion. A further discount of 25 per cent will be offered if the heating load is suitably controlled to ensure off-peak operation.

Celebrating its 50th anniversary as a Hydro municipality recently, Beachville Hydro System sponsored a display of vintage electrical equipment. More than 1,700 viewed the exhibit at which food prepared with old electrical apparatus was dispensed.

Durham P.U.C. plans a new headquarters building at an estimated cost of \$43,000. Of cement block construction with a brick front, the building will be electrically heated.

Rainy River, Hearst and Sioux Lookout Hydro Commissions in Northern Ontario are negotiating cost contracts with Ontario Hydro. They are presently supplied on a fixed price basis.

Niagara Falls City Council intends to increase membership of the Hydro-Electric Commission from three to five in the light of the pending merger of Niagara-Falls and Stamford Township, January 1, 1963.

George Grabb has retired as manager and secretary-treasurer of Chesley P.U.C. He is being succeeded by William A. MacIntyre. Two Ottawa Hydro employees, Stan Waddell and Lydia Ouellette, were honored recently on their retirement after 50 years of service.

Tower Section Takes to the Air



Employing techniques developed in the airborn construction of the 50-mile Hornepayne to Manitov wadge wood pole transmission line earlier this year Ontario Hydro forces working on the E.H.V. (extr high voltage) line in Northeastern Ontario recentl air-lifted aluminum tower sections into an inaccessibl site.

The tower is one of a hundred aluminum structures ordered for one section of the 230-mile lineand, while most have been transported and erecte in the normal manner, plans now call for movin 11 of the towers to the most inaccessible sites the helicopter.

These sites are in heavy muskeg north of Tin mins, a section of line to be completed this winter when frost permits the movement of men an materials.

It's not surprising that Canadian-U.S. relations have their little up and downs considering the lack of knowledge displayed by some who hold forth from the public

OFF THE WIRES

platform. A recent clipping from the Buffalo Evening News is a case in point. It credits a leading utility spokesman with the boast "The United States leads the world in per capita use of electricity."

According to our calculations, the per capita consumption of electricity, in 1960, was 4,677 kilowatt-hours in the United States and 6,132 in Canada. And Norway was above this again.

Of course, the Norwegians are out of earshot, but this kind of bombast is readily wafted north and south of the long and fenceless border.

We have always admired the housewife's ability to cope with the intricate controls governing the apparatus in a modern kitchen, but an electronic oven now in production almost proved her undoing.

When the Department of Transport got wind of the oven, manufactured by a Montreal firm, it sat up and took notice. Because the device incorporated a radar-type transmitting tube and made use of a very high frequency wave-band, they reasoned, its operation should not be permitted without a radio licence.

Apparently the department has reconsidered, since more than a hundred of the units have been sold in Canada, but the handwriting may be on the wall. Tomorrow's housewives may well require degrees in electrical and mechanical engineering, and be able to demonstrate a sound knowledge of computer programming before the government will permit them to set foot in the kitchen.

Municipalities who would like a share of the convention business might take a leaf from the Kit-



chener Chamber of Commerce. As a delegate to the recent convention of the Canadian Industrial Editors' Association in that city, we were literally bombarded with the kind of attention likely to leave a lasting impression of hospitality and goodwill.

Helpful literature outlining the many attractions of this fascinating Grand River Valley centre began to arrive a month before the event and only ended with a personal letter of welcome from Mayor James E. Gray. In addition, the lively local Chamber of Commerce took personal charge of the ladies program, including plant tours, visits to places of historic interest and other entertainment. It even volunteered to arrange for hair dressing appointments.

Visiting firemen can make a welcome contribution to the coffers of local merchants, but they are not likely to show up a second time without a certain amount of wooing at the municipal level.

The electrical industry in the United States is viewing with understandable alarm the inroads being made by "do-it-yourself" electricity, generated by small gas turbine units for apartment and other commercial developments,

but at least one such project has come a cropper. A shopping plaza installation of gas turbine generation is under legal fire from owners of adjacent property. The plaintiffs, in a \$34,000 damage suit, say noise creates a nuisance.

Ever since Edison invented the electric light bulb in the 1870's. lighting has been employed to improve our living standards in a great variety of ways. But none of its applications, we think, is more subtle and ingenious than the one employed by an astute Hydro manager in the interest of office efficiency. He was perplexed that female members of his staff were spending time far above and beyond that which might reasonably be required for routine trips to the dressing room, with a deleterious effect on the work load.

Wracking his brain for a solution to the delicate problem, he decided that the subdued and flattering dressing room lighting might be a contributing factor. When this was replaced with a cold white fluorescent flood concentrated over the mirrors in such a way that each wrinkle and blemish was relentlessly reflected, he found that time-out was reduced by more than 50 per cent.

The Editor, ONTARIO HYDRO NEWS 620 University Ave.,
Toronto, Ontario

My address is incorrectly listed; please change it to:

NAME

COMPANY

STREET and NO.

TOWN or CITY

PROV.

Please return this, with your old or incorrect listing to The Editor.



Sunshine Special—a provincewide promotion of electric clothes dryers—is to be a highlight of the fall merchandising season again this year.

A repeat performance became inevitable when the results of last year's Sunshine Special were announced. A total of 15,200 dryers were sold during the 1961 campaign period, and participating manufacturers, dealers and utilities immediately requested a similar campaign in 1962. This time the target is 17,500 dryers to be sold during the campaign period.

All manufacturers of electric clothes dryers sold in Ontario, a majority of appliance dealers, and nearly all municipal electrical utilities

in the province are briefed and ready as the November 3 launching date approaches. The campaign will run to December 15.

Sunshine Special is being dramatically announced to the public with full-page, two-color advertisements in Ontario's eight largest daily newspapers. In addition, all other daily newspapers and most weekly newspapers in Ontario are carrying black - and - white announcements. Supporting advertisements will be included in all news media during the campaign.

As an incentive to the public, a free electric blanket will again be offered to each purchaser of an electric clothes dryer from a participating

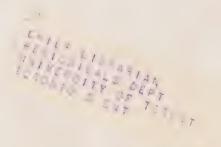
dealer during the campaign period. Cost of the blankets will be shared by manufacturers, dealers and municipal utilities participating in the campaign, and by Ontario Hydro.

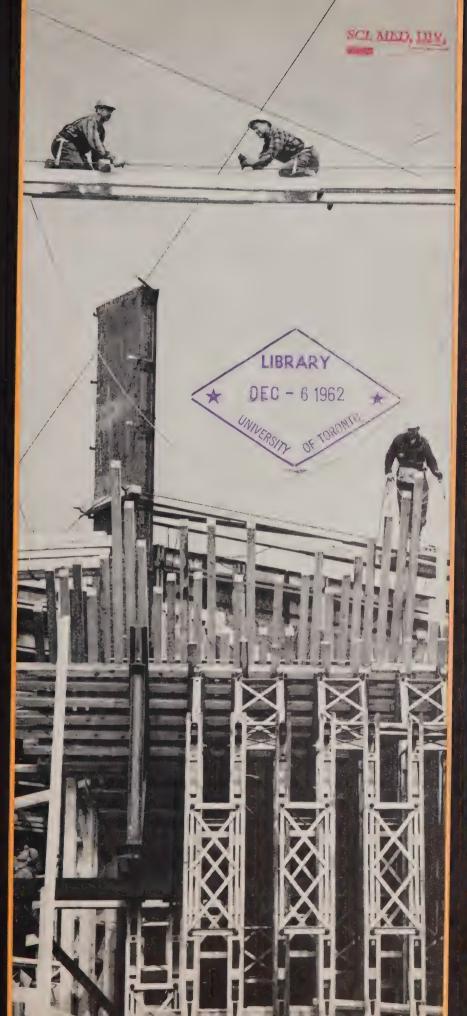
In conjunction with preliminary preparations for Sunshine Special 1962, a survey was conducted by Ontario Hydro's Marketing Research Department, in the Metropolitan Toronto and immediate surrounding area, to determine how clothes dryers are changing the Monday morning washday habits of homemakers.

Of the 1,000-odd questionnaires sent to homemakers owning automatic electric clothes dryers, more than 500 were returned with the required data. Homemakers involved kept track, over a two-week period, of the number of minutes of each hour of each day spent washing and drying clothes.

Results showed that Monday morning for washing and drying clothes is not as traditional as it was years ago. The survey also showed that homemakers who owned both automatic electric washers and dryers used their dryers more often on any given day, and more often during the week, than homemakers who owned only an automatic dryer.

All of which indicates that domestic electric laundry equipment is even more desirable as a load-builder than was previously suspected.





HYDRO
NEWS

NOVEMBER, 1962

Skilled hands and steady nerves are a prerequisite on many of Hydro's northern projects.

Articles in this issue include:

- Northern Roundup
- A Salty Tale
- Burlington's Big Day
- Automation in Operations
- King City Joins the Family



Skyline across the river is Detroit, while mill in the foreground belongs to the Canadian Rock Salt Company, Ojibway, Ontario. But our story is far below the surface. For a salty tale 30 million years old, please turn to page 16.



What's the lovely lady up to? She's collecting graphs and recordings of load and production to help Hydro estimate and schedule tomorrow's power requirements. For a closer look, and further details of complex scheduling procedure, please turn to page four.

NOVEMBER, 1962

ONTARIO HYDRO NEWS

CONTENTS

- I Northern Roundup
- 4 Automation in Operations
- 8 Owen Sound Sells Electric Heating
- 10 Big Day in Burlington
- 12 Organizing a Meeting
- 14 King City Joins the Family
- 16 A Salty Tale
- 21 Along Hydro Lines
- 25 Off-The-Wires

THE COVER

Ontario Hydro's diversity of operations calls for a great variety of talent. Carpenters shown on this month's cover must combine calm nerves, skilled hands and rigid adherence to safety practices. They are at work at Little Long G.S. on the Mattagami River. Brief sketches of other northern developments are on pages two and three.

THE COMMISSION

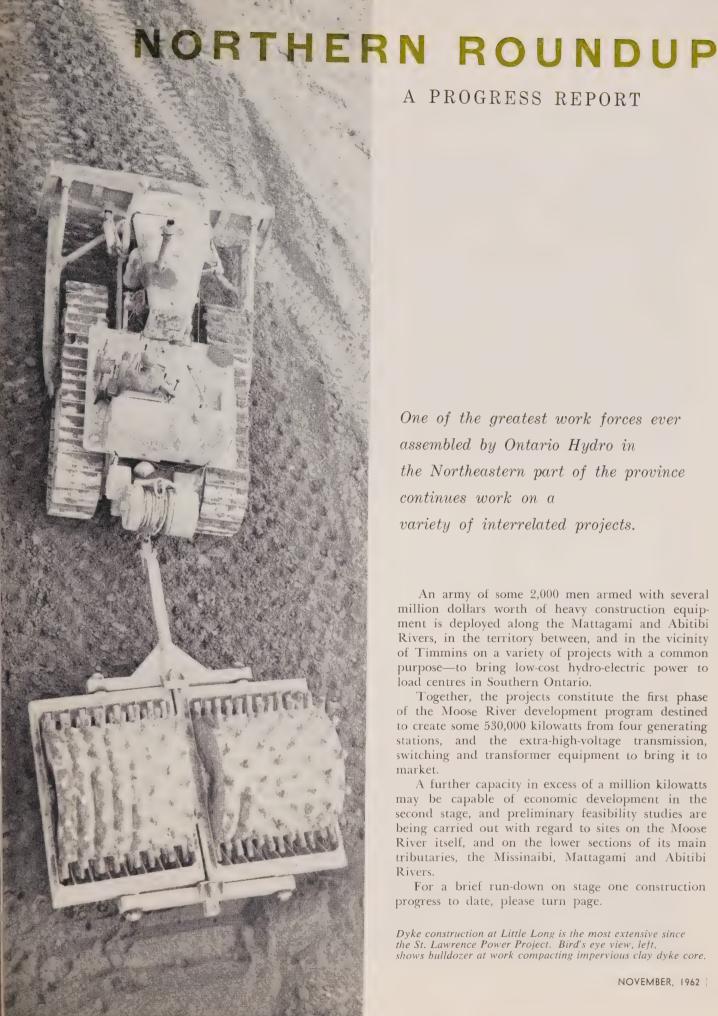
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A PROGRESS REPORT

One of the greatest work forces ever assembled by Ontario Hydro in the Northeastern part of the province continues work on a variety of interrelated projects.

An army of some 2,000 men armed with several million dollars worth of heavy construction equipment is deployed along the Mattagami and Abitibi Rivers, in the territory between, and in the vicinity of Timmins on a variety of projects with a common purpose—to bring low-cost hydro-electric power to load centres in Southern Ontario.

Together, the projects constitute the first phase of the Moose River development program destined to create some 530,000 kilowatts from four generating stations, and the extra-high-voltage transmission, switching and transformer equipment to bring it to market.

A further capacity in excess of a million kilowatts may be capable of economic development in the second stage, and preliminary feasibility studies are being carried out with regard to sites on the Moose River itself, and on the lower sections of its main tributaries, the Missinaibi, Mattagami and Abitibi Rivers.

For a brief run-down on stage one construction progress to date, please turn page.

Dyke construction at Little Long is the most extensive since the St. Lawrence Power Project. Bird's eye view, left, shows bulldozer at work compacting impervious clay dyke core. Otter Rapids

Otter Rapids looks like this from the air-with headpond flooded and units 1 and 2 in service. Some 125 men are now preparing final two units for service. Ultimate capacity—172,000 kilowatts.

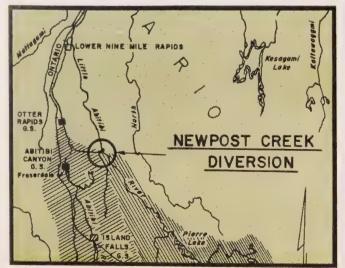


First of the plants in the new Northeastern complex to get underway was Otter Rapids G.S. on the Abitibi River. Construction forces moved into the project in the spring of 1958, and the first two units, generating 86,000 kilowatts, went into service last fall.

Extension of the powerhouse to accommodate units three and four began this August, and the plant is scheduled for full production by next October. A work force of 125 is presently on the job.

Newpost Creek Diversion

Circle indicates where two canals and a control dam will be built to channel flow of Little Abitibi River into Abitibi proper via Newpost Creek. Shaded areas indicate part of existing and additional drainage areas. Diversion is expected to provide some 65 million kilowatt-hours of additional energy from Otter Rapids G.S.



Not averse to altering the wilderness topography in the interest of power production, construction forces are about to embark on a project which will provide Otter Rapids G.S. with an estimated 64,600,000 kilowatt-hours of additional energy each year. In a nutshell, the scheme involves changing the course of the Little Abitibi River so that it will flow into the Abitibi proper, above Otter Rapids G.S., rather than below, as nature intended.

Two canals and a control dam will be built to redirect the flow, via a small lake and two creeks, to a point on the Abitibi about half way between Abitibi Canyon G.S. and Otter Rapids G.S.

Start of construction awaits only a heavy snow cover so that a 19-mile access road can be punched through to the site from Abitibi Canyon. A camp will be established and heavy equipment moved in to strip the muskeg while the ground is frozen. Canal excavation and the building of a timber crib control dam will follow.

Little Long G.S.

Main features of Little Long project are shown in this aerial view. Powerhouse area and tailrace excavation are in foreground with main dam and diversion section stretching out to the right.



Of the three plants slated for construction on the Mattagami River in the first phase of the Moose River program, Little Long was the first to get underway. Some four and one half miles of earth dyking, the most extensive since the St. Lawrence power project, has been virtually completed, and headpond flooding will commence next spring. For the first time, excess water will be passed down the Adam Creek diversion, a scheme which will also make it possible to direct unwanted water past two other Hydro plants to be constructed farther down stream.

Powerhouse construction at Little Long began this August, and turbine erection has commenced. By the target date, October, 1963, Little Long will be producing 114,000 kilowatts from two units.

Harmon G.S.

Construction forces are already at work on Harmon G.S.—second Mattagami River development. Photo shows cleared project area and access road with square-end "pointer" moored in fast water.



Initial work on Harmon G.S., the second of the Mattagami developments, is gathering momentum. An access road from Little Long has been completed, and construction proper began in October. First task is to cut a diversion channel, involving excavation of some 35,000 cubic yard of rock, and to construct coffer dams to direct the river around the dam site. Harmon G.S. will be producing 110,000 kilowatts from two units by October, 1965.

Work on the third Mattagami River project, Kipling G.S. is scheduled to commence early in 1964 with production slated for 1966.

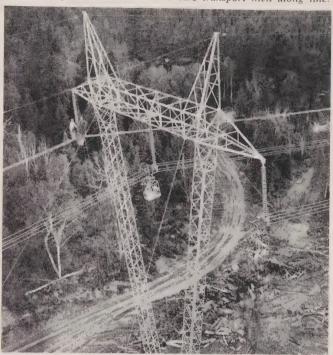
An interesting feature of the Mattagami developments is that one construction camp will serve all three projects. Offices, garages and maintenance facilities will be built between the Harmon and Kipling sites, some two miles apart, but workers will live at the Little Long colony and commute to their jobs.

Pinard T.S. and E.H.V.

Control centre of the new network will be Pinard Transformer Station now under construction near Abitibi G.S. Feeder lines, operating at 230,000 volts and radiating from the various generating stations, will converge at Pinard, the northern terminus of the E.H.V. line which will eventually transmit power at 500,000 volts to Southern Ontario.

While the generating stations will be remotely concrolled from Pinard, a 27-mile access road is being bushed through to Pinard from Little Long so that personnel will be able to reach the plants for routine maintenance and in the event of an emergency.

Progress on the E.H.V. line itself is equally encourging. Seventy miles have been completed south of This drama being enacted 100 feet in the air involves placement of spacers on E.H.V. line to prevent conductors from vibrating and clashing. Motor-driven cable cars transport men along line.



Timmins, and activities have been switched to the northern leg of the project for the winter—the only time that construction through heavy muskeg is feasible. First section of the line, from Pinard to Hanmer, near Sudbury, is scheduled to be completed by the fall of 1963. It will operate, initially, at 230,000 volts.

Road building is an arduous and costly necessity in isolated northern projects. Photo shows typical section of 32-foot-wide access road built between Little Long and Harmon—distance of 10 miles.





Just as automation in generating station control has been hastened by increasing costs and the difficulty of manning and maintaining colonies for operators in remote areas, so automation in the control of the Ontario Hydro systems has been stimulated by the introduction of thermalelectric generation.

Because of the higher cost of thermal power production, it has become imperative that the greatest possible use be made of available hydraulic generation and of the most economical sources of thermal generation.

To achieve this essential degree of efficiency in Southern Ontario, a system control centre has been established at Richview Transformer Station, on the northwestern outskirts of Toronto.

The centre could rightly be called the brain of the system, since it is from here that the hour-to-hour demand and regulatory control of the entire Southern Ontario System is planned and executed. This control extends over the complete generation and transmission facilities of the high voltage (115-230,000 volt) system.

Essentially the centre performs three main functions:

1. Using methods developed from statistical analysis of past data, daily load forecasts are prepared by the Commission's production scheduling staff. From these, an hourly loading program is prepared for the major production sources and interconnections. This schedule is supplied to the centre's production supervisor for execution.

2. The production supervisor in turn relays this information to the appropriate regional operators, who load their production facilities to this plan. However, since the plan is produced almost 24 hours in advance and conditions can vary widely on the system and, in fact, on all interconnected systems, the supervisor

must keep a constant check-selling surplus power when there is excess energy available, and buying power from an interconnected system when the cost is lower than the cost of production from our own facilities.

3. The third function for which the system supervisor is responsible is system security; that is—an adequate supply of generation or purchased power to meet all demands, and sufficient transmission facilities to safely carry power from the source to the customer.

Another feature controlled from Richview is spinning reserve, that is, capacity sufficient to replace the largest unit on line if mechanical or other cause suddenly removed it from service. In many cases the same station provides both regulatory and spinning reserve, both controls initiated from Richview T.S.

If system control were merely a matter of seeing that a particular source was capable of producing the required power and served by enough transmission facilities to convey the power to the customer, system control would be relatively simple.

However, to reach maximum efficiency, it is necessary to balance many factors in order to arrive at a program which is best for that day's particular loading conditions.

First of all, each generating station has its own operational peak, that is, a point at which it produces power at its lowest unit cost. Then, too, unit costs vary at each plant. To complicate matters, water conditions must be taken into consideration to allow for the hourly variations in water supply of the Niagara River and to maintain reservoirs for logging requirements, cottagers, navigation, and the stipulations laid down by various agreements on all rivers.

Since the daily forecasts on an hourly basis are completed some 24 hours ahead of time, variations in production and load sometimes result,

PART III - CONCLUSION

SYSTEM CONTROL

by Bob McDonell

From this console at the Richview Control Desk, manned by Walter Wilson, foreground, system regulatory and spinning reserve control is initiated. Gordon Braybrook, background, checks telemetered information from major generating stations in network.

John Michinsky, far left, and Harry McNaughton go through reams of paper tape in producing load schedules for major plants. System security—sufficient generating and line capacity-are prime concern of Lloyd Beverly, below, at system desk. Photo, right, shows Anna King and Carrol McCann collecting graph recordings of load and production. These are important in production scheduling.





which necessitate closing down some of the units or starting up reserve

In the latter case, the production supervisor has the option of buying power from interconnected systems if this is available. Which alternative is used depends largely on the relative costs.

For instance, if another 100,000 kilowatts is needed, it may be cheaper to buy this power from Detroit Edison—one of the interconnected systems—than it would be to start up a thermal unit to handle the load.

Because system control is currently in a state of flux due to continuing advances in automation, it might be well to consider what is now being accomplished, what the short-range changes will be, and what is possible in the foreseeable future.

In the operation of its system, Ontario Hydro has to meet its customers' demands each instant. This demand is highly variable through the day, although it follows a fairly

predictable pattern from day to day. Because of its predictability, 90 to 95 per cent of the demand can be met by pre-scheduling most of the resources while the remaining fringe on the demand graph is carried by one, or possibly two generating stations under the control of the automatic generation regulator at Richview. This is the present method of matching production to demand, and, although it is not sophisticated compared to future plans, it requires an extensive telephone communication network and telemetering and control installation to support it.

The production and system supervisors are in direct telephone contact with the various regional operators, the staffs at the major generating stations, and with their counterparts at the control centres of interconnected utilities. They also have displayed before them the telemetered loads on major generating interconnections with neighboring stations and utilities. The system regulating facilities at their disposal permit selection of any one, or certain combinations of two or more of seven major hydro and steam stations for regulating duty.

The regulating system works on the same principle as the temperature regulator in any household. Just as the temperature regulator tries to maintain the flow of heat energy from the furnace to balance the heat losses from the house, so the system regulator tries to maintain at all times electric energy flow into the grid equal to electric energy taken from the grid by Hydro's customers.

The temperature regulator uses room temperature as its indicator for heat requirement, whereas the system regulator uses a combination of system frequency and net power flow between Hydro's grid and neighboring grids as its indicator of generation requirement. When system frequency and power transfers with other grids indicate the demand on Hydro's system is exceeding supply, the regulator



at Richview sends electric signals to the generating station selected for regulating duty, and the output is automatically raised to bring production into line with demand.

Conversely, when demand is less than supply, the regulator acts in the reverse direction to reduce output at the regulating station.

While the present method of manually scheduling the majority of resources and using selected regulating plants to meet the minute-byminute load changes works well, it does not, because of the complexity of the problem, ensure that all the resources are continuously co-ordinated to achieve minimum production costs.

The next stage in the development of system automation is expected to go a long way in reaching this objective. When this plateau is reached, the daily loading schedules for each major source, including interconnections, will be prepared by a digital computer. Such data as

water availability, fuel costs at thermal plants, line loss data, and expected daily load pattern will be fed into the computer each day, and, by following a rigorous optimization program, the computer will produce co-ordinated schedules for all major resources which will meet the load at minimum cost.

It will also provide the daily worth of water at each of the larger hydro plants. This information will be set into new system regulating equipment at Richview which will be installed at this stage, and loading of these stations will be automatically co-ordinated with the steam plants according to the computer-produced schedules.

The next, and, likely, "ultimate" step in system automation will provide for complete closed loop control of all the system's major resources. That is, data would be collected continuously and automatically on all the major factors which affect system operation. This would be fed

directly into a large digital computer located at Richview. The computer would then digest and sort this data and issue loading instructions to the generating stations without human intervention.

In addition, the same machine could be used to perform security checks. For instance, it may be necessary to take a line out of service at a time when the grid is heavily loaded and it is desired to know the safe loading limits that should be applied to the remaining circuits. Only an approximate answer can be given by conventional methods. The computer could produce a more precise answer quickly, which would permit maximum use of the lines left in service and, at the same time, ensure that safe loads were maintained.

For instance, in the loading of lines, great economies can be achieved by effectively cutting the distance between the source of the power and the load. This applies not only to our own system, but also to interconnected systems.

The Power Authority of the State of New York may require a large portion of its Niagara power at or near our St. Lawrence plant, and Ontario Hydro's load may be centered in the Niagara district. Through a mutual agreement to reduce line losses, Ontario Hydro may supply the P.A.S.N.Y. load in the east from the Robert H. Saunders - St. Lawrence Generating Station, and P.A.S.N.Y. would supply Hydro's Niagara load from its Robert Moses Niagara Power Plant. This interchange of power is also very valuable for rerouting purposes in the case of line failure.

How soon automation to this degree might become feasible depends entirely on cost. It is highly unlikely that the numerous smaller hydraulic plants will be included in the automatic loading scheme since the cost of the equipment required could never be recovered from improvements in production economies.

Modern, large plants, however, do lend themselves to complete automation and incorporation in the centralized economic loading system, and it is likely that many of them will one day be completely automatic, watched only by a computer and emergency trouble crews.

OWEN SOUND TAKES TO ELECTRIC HEATING

How is it that every second home built this year in Owen Sound is heated the modern way-with elec-

Outdoor temperatures are not a factor. No mysterious warm current flows in Georgian Bay to give Owen Sound a climatic advantage. With an average of 7,850 degree days, the city falls in the medium temperature range for Ontario municipalities.

Rates are important, but the 1.15 cent net per kilowatt-hour charged by Owen Sound Hydro is no lower than the rates established for electric heating by dozens of other utilities in the province.

Nor can the fact that 56.6 per cent of the homes built this year are heated electrically be attributed to the sale of a single sub-division. All the homes in question were built to the requirements of the individual

Admittedly, it was a quiet homebuilding year in Owen Sound, but it is the ratio which is significant—and 13 of the 23 new homes built in 1962 were electrically heated.

The answer lies with the staff of the Owen Sound P.U.C. headed by Robert Butter, and in the progressive attitude of the commissioners. Over the years Owen Sound has been quick to introduce special services designed to boost utility revenue while providing something extra in the way of customer accommodation. And the commissioners have been of great assistance through their enthusiastic support of concepts designed to improve service.

Owen Sound Hydro was among the first to introduce a wiring and appliance finance plan; to offer rebates to customers installing important load-building appliances in order to help offset the extra cost of underground distribution; and to recognize the vital importance of the water heater load. The utility continues to carry out one of the most successful water heater promotional programs in the province.

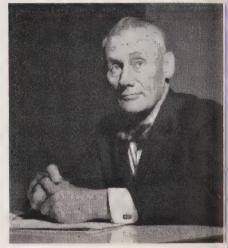
Combining absolute integrity with its promotional activities, Owen Sound Hydro won the confidence and respect of its customers, who were generally receptive when electric home heating became available. The utility considers that the standards laid down from the outset by the Electric Heating Association, as well as Hydro's province-wide advertising campaign, were other important factors in securing public acceptance.

But something more tangible and direct was needed at the local level, and they found it in house plans.

"We obtain the contractor's house plans and make three tracings," Bob Butter explains. "One suggests how the home could be heated electrically, the second depicts Bronze Medallion wiring, and we draw in Gold Medallion wiring on the third." The electric heating plan includes heat loss calculations and suggested location of heating units.

Three copies are made of each of these tracings, and one is sent to the real estate agent or contractor, one to the customer, and one is retained for the files.

To conserve time, permanent tracings, which include the legend, medallion symbol, and an invitation to contact the utility for further details, have been prepared, and these are attached to the tracings of the



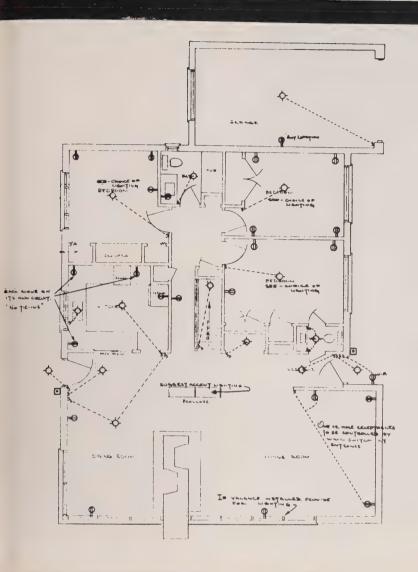
Owen Sound Hydro manager Bob Butter, above, his staff and commissioners are to be congratulated for their progressive approach to load building. Sample tracing of Bronze Medallion house plan, as sent out by utility, is reproduced on opposite page.

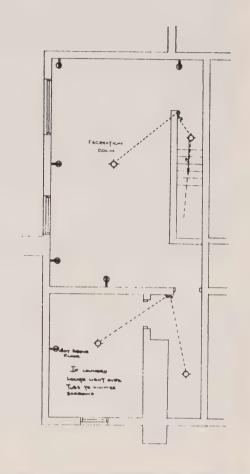
house plans before the copies are printed. Finally, descriptive literature pertinent to each type of installation is pinned to the tracings.

"It is interesting to note," Bob observes, "that of the 13 electrically heated homes built in our area in 1962, six were Gold Medallion, five Bronze Medallion, and two electrically heated with standard wiring."

Owen Sound meters the heating load separately because they feel it puts them in a position to talk positively about electric heating costs and permits a more accurate assessment of the load in relation to the system.

Owen Sound feels that the house plan procedure is a good way for the medium or small-sized utility to bridge the gap between advertising and direct contact with the builder or customer. It seems to work in Owen Sound.





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BIG DAY IN BURLINGTON

New Hydro centre and water purification plant are proclaimed as symbolic of foresight and progress.

Under a persistent rainfall that did nothing to dampen the enthusiasm of the occasion, Ontario Hydro Chairman W. Ross Strike used a pair of electric scissors to snip a white ribbon—declaring the handsome new headquarters of the Burlington Public Utilities Commission to be officially open.

Hailed by a distinguished group of Hydro, municipal and other leading representatives of government and industry attending the ceremonies as symbolic of the area's progress and the utility's foresight, the \$500,000 administration building and service centre brings together work previously performed in four locations.

"I have always felt," Mr. Strike said, "an affectionate and almost paternal interest in watching this area grow. The Burlington commission has progressed steadily with the district—and, indeed, led its growth."

In a brief review of the history of electricity in the Burlington area, he noted that the early-day cost of seven cents per kilowatt-hour, as compared with the present 1.36 cents, which was the average cost per domestic customer in 1961, proved that the more consumption is increased, the easier it is to keep costs down.

"The people of Ontario put their faith in the principle of public power," he said. "Hydro belongs to the people, and we are their trustees. It supplies the energy on which this province has nurtured its growth—tremendous growth—and we have grown with it. We have striven to keep costs down, and it's our duty to continue to do so."

Earlier in the day he had attended the opening of the P.U.C.'s new water purification plant.

Ontario Prime Minister John P. Robarts, guest speaker at a luncheon marking the occasion, stressed the importance which must be attached to the water supply. He said that the P.U.C.'s latest development would go a long way to promote and

Symmetrical fountain compliments contemporary architecture of new Burlington P.U.C. building. Administration and service centre brings together work previously performed in four locations.

stimulate the economic growth of the

N. R. Craig, chairman of the Burlington P.U.C., noted that the new structure had been financed without debentures. It was done out of revenue and with bank loans.

In a brief message of congratulations, P. R. Locke, President of the Ontario Municipal Electric Association, said that the opening recalled the words of a past Ontario Hydro chairman, the late Robert H. Saunders: "The Great Lakes basin will someday be comparable to the Ruhr Valley." He thought that Burlington's achievement ranked with Lakeview Generating Station and NPD as outstanding contributions to the future of the province and the nation.

Ron Harrison, president of the Association of Municipal Electrical Utilities, praised the functional yet pleasing design of the new building.

"It's both attractive and practical," he said, "and there is ample provision for future development; the building is also not of a nature that will soon be outdated."

The buff-brick building brings together four operations previously carried out at separate locations: the main office building, stores and service centre, meter shop, and garage. It serves both the Hydro and Water departments of the P.U.C.

In the new, 22,800-square-foot service centre are lunchroom, meter shop, stores for both divisions, foremen's offices, and a combined water and Hydro truck centre. The administration building, with 10,300 square feet of floor space, houses the engineering and administration departments of both operations, board room, department heads' offices and general office.

All electrically heated, the new centre features a central warm-air system with supplementary baseboard units in every room of the administration building to permit individual control.



View from the service counter, right, shows bright and spacious main office, located slightly below ground level. In photo, below, Hydro Chairman W. Ross Strike cuts symbolic ribbon with N. R. Craig, Burlington P.U.C. Chairman, assisting. Premier John P. Robarts, lower right, speaks at luncheon prior to the opening.





A municipality on the move

Time was when a trip between the Town of Burlington and the City of Hamilton represented quite a jaunt—but not any more. In fact, annexation and the shape of the Lake Ontario shoreline have combined to create a geographical peculiarity whereby Burlington now touches both the east and west limits of Hamilton.

Although it has played a role, it would be wrong to attribute all of Burlington's progress to annexation. A glance at the local Hydro record proves otherwise. The number of customers served by Burlington P.U.C. jumped from 1,090 customers in 1934 to 3,288 in 1957—the year before the Township of Nelson and some one-third of the Township of cast Flamborough were annexed. In the same period, load climbed from less than three million kilowatt-hours to almost 26 million kilowatt-hours.

After annexation, number of customers served exploded to 12,033, and this has since increased to 14,265 as progress

continues. Load in 1961 totalled an impressive 154 million kilowatt-hours.

Burlington can trace its history to a land grant dated 1778, and it got its first real boost at the outset of the 19th Century with an influx of United Empire Loyalists. But as a Hydro municipality it is, relatively, a youngster.

It was only in 1930 that Ontario Hydro purchased the facilities of the Dominion Power and Transmisssion Company and commenced serving the town as a Hydro-owned local system. Not until 1945 did the town purchase the distribution system and become a cost-contract municipality.

And it has never looked back. With a population in excess of 46,000, Burlington is the largest town in Ontario. Encompassing some 86 square miles in the very heart of Ontario's greatest industrial complex, served by every kind of transportation, and with unlimited supply of electricity, Burlington faces the future with optimism and confidence.

THE CHAIRMAN CALLS THE SIGNALS



The quarterback pivots. He fakes twice, then hands off the ball. A halfback shakes off two tacklers, finds a hole, crashes through the line

and sprints 35 yards for the winning touchdown.

The half's teammates thump him on the back while the crowd cheers.

But who really should get credit for the touchdown? The quarterback? The lineman who opened up the hole in the line? The other half whose faking outwitted the foe? The coach who thought up the play?

Wasn't that touchdown a team effort?

Next time you go to a meeting or a conference, remember that play, because a worthwhile meeting has all the elements of a co-ordinated team effort to score a touchdown. If you are ever asked to chair a meeting, you must be a coach-cumumpire—a leader and a judge, but seldom a ball carrier.

Meetings are necessary for decision-making in any group. Two or more people meet to exchange information, reach a decision, or get agreement about some course of action—like how to score a touchdown.

As chairman you must see to it that your meeting meets some objective. Good meetings, like well-executed touchdown plays, require a lot of planning and careful preparation.

Let's look behind the scene on the football field and pick up some helpful tips in conducting a meeting as we go along: Planning the meeting:



Like the coach who worked out that scoring play long before the game, you, as chairman, must make plans for the meeting. You must

line up speakers and draw up an agenda. You will have to check all the arrangements yourself, such as where the meeting will be held, seating arrangements, and so on.

Success will depend on how carefully you lay the ground-work. Plenty of work is involved, and there is no easy way out.

Supplying information:



A coach makes sure the players know where they are to play and the game time. He briefs them on all the key plays, and tells them what he

expects each one of them to do.

So does a good chairman. He supplies information to the speakers, officers and the members so they can make arrangements to attend and take an active part.

Starting off the meeting:



Another key to success is the way the chairman starts the meeting. Like a coach in the dressing room, he sets the mood; he injects enthusiasm

for the job ahead. A chairman should start off on the right foot by saying why the meeting was called and what has to be accomplished.

Pointing out the objective is easy for a coach—everybody knows where the goalposts are. But sometimes the objective of a meeting is not clear-cut. It's up to the chairman to define the goal and give the meeting purpose and drive.

Keeping the discussion moving:



Sometimes a football team bogs down and the coach, watching from the bench, must somehow get his team moving again. So a meet-

ing can dawdle over one point. As the coach sends in a new play so a meeting chairman must keep the discussion moving by adroitly introducing a new point.

Keeping on the subject:



The coach wouldn't let half his team take time out to play leap-frog on the 40-yard line. And a meeting chairman must not let discussion

wander away from the main highway to explore a country lane. He must use all his skill to keep the meeting moving toward its objective.

Stimulating contributions:



The coach knows that every player must do his part in a scoring play, and he uses all his leadership skills to encourage everyone to give

his best effort.

So the chairman must enlist the support of as many people as possible at a meeting. His job is to get the ideas of others out for an airing. Sometimes he can do this by directing a question at a silent member (or the man next to him).

20

15

10

Summarizing thinking:



A meeting can be as fluid as a football game. You never know what may develop. So, like the coach who gets the opinions of the players at

half-time on how to achieve his goal and summarizes them in his pep talk, the alert chairman draws the strands of thought together at a meeting. He wants to assure complete understanding at various stages of the meeting.

Get group to agree:



There's bound to be disagreement in any group, whether it's a football team or a meeting of saints. It's the chairman's job to search out

reas of agreement and point hem up, while playing down ifferences. The chairman hould hold the reins lightly out firmly. (If the going gets to tough, you can always get eople to agree to disagree.)

arrying through:



With the help of the players the coach now has worked out his strategy to spring loose his fleetfooted halfback. Every player knows

hat he has to do. And the bach makes sure they know it. So it's the chairman's job to the ball rolling and specify the necessary responsibilities and authorities to carry out the tion. He must see that everythe understands who will do nat job and when.

Here are a few extra tips to ep in mind: Start on time; courteous; never get angry; n't call upon club members speak without adequate tice; and end promptly.

Follow these rules and you a say with a sense of accomshment:

'This meeting is adjourned."

Some day you may be called upon to serve as chairman of a meeting. Here are some tips on how to carry it off successfully.

DON'T FUMBLE with amendments

Many a chairman has been scared by an amendment to an amendment. A Royal Bank News Letter suggests how to handle it without a fumble:

"A first amendment is easy to handle: it must not say 'no' to the motion, but only vary it in some detail; it must not introduce entirely new matter (which belongs in new motions); it may leave out certain words, add certain words, or delete certain words and replace them by others. These same rules apply to an amendment of the amendment."

Suppose someone makes a motion to give \$100 to the Society of Ancient and Antique Bell Ringers.

The amendment is to delete "\$100" and substitute "\$150". The amendment to the amendment is to delete "\$150" and substitute "\$50 at this time and \$100 spread over the next five months."

You call for a vote on the amendment to the amendment. If it carries, then the main motion is automatically carried as amended by the double amendment. If it is defeated, you call for a vote on the amendment. If it carries, the original motion is carried as amended. If the amendment is defeated, you put the original motion.

Got it? If not, try again, because fumbling with amendments throws a lot of meetings into confusion.

You can dig deeper into the rules of parliamentary procedure, which govern all meetings by consulting Beauchesne's "Procedure at Meetings in Canada" (1954) or Bourinot's "Rules of Order" (1924).

KING CITY JOINS THE HYDRO FAMILY

by Gordon Murphy

"I've been crossing those tracks for 91 years," said Andrew McClure, indicating the railway which cuts through the heart of King City Police Village, some 20 miles north of Toronto, "and I've seen many a change in this part of the country."

This was Mr. McClure's way of saying that he will soon be 92 years old, and that, as unofficial historian of the community, he has more than a passing interest in the latest major development in the life of the village—the fact that King City has recently joined the Ontario Hydro family of municipalities.

It wasn't necessary to tell Mr. McClure that this brought the total of municipal Hydro systems in the provincial family to 355. He was quite aware of it. The date, July 1, 1962, had already been added to a memory catalogue which can produce, at the slightest prompting, names, events and dates that span almost a century.

The newest addition to the Hydro family was formed at the request of the village trustees, who asked Ontario Hydro to carry out an inventory to determine the amount needed to purchase the existing distribution system, and to submit a tentative rate structure in order to find out what electric power would cost local residents under a village Hydro system.

The purchasing price worked out to approximately \$102,000. Facilities turned over to the village included 6.84 miles of 8 kv distribution line, about 60 transformers, some 275 poles, and more than 100 rental water heaters—all serving some 535 customers representing a total load of 880 kw.

"It was a long-term investment for

us, and a good one," says Robert J. O'Reilly, chairman of King City trustees, who will administer the new municipal Hydro system. "The purchase was made through debentures, and the debt is self-liquidating.

"Under the arrangement," continued Mr. O'Reilly, "we have Hydro at slightly lower rates and are investing in ownership." King City Hydro will have retired the initial debt in about 20 years, and, from its inception as a municipally owned utility, it acquires an equity in the provincial Hydro system in its own name which it will continue to build up in the years ahead.

The other two members of the village trustees—Robert Berwick and James W. Sim—are serving as commissioners of the system, which was formerly a part of Ontario Hydro's Richmond Hill Rural Operating Area. The system will continue to be maintained by the Richmond Hill R.O.A., which will undertake any new system construction and carry out repair and maintenance work.

The trustees are also responsible for the village water system, which had been experiencing shortages until the recent sinking of a new well believed capable of producing 200 gallons a minute—enough to handle all present needs. The two existing artesian wells serving the village are to be placed in reserve to provide for future expansion, including possible industrial developments.

King City is at present a completely residential community, with about 80 per cent of its 2,000 population commuting daily to jobs in nearby Toronto. The Village is a relaxed and leisurely place, where first names in greeting are the rule.

Were it not for the occasional thunder of a freight or the roar of a transcontinental passenger train passing through, it would be hard to believe that the hustle and bustle of Canada's second largest metropolis is so near.

The Police Village of King City, according to Andrew McClure, known to all and sundry as "Andy," acquired its somewhat contradictory name because of the prevalence of the use of the word "king" to designate areas and settlements in the district. Mr. King was a foreman on the railway which came through in 1853. This led to considerable confusion, particularly where mail was concerned. The postal puzzle was solved about 30 years ago when the name Police Village of King City—or simply King City—was adopted.

Surrounded by memories in his 70-year-old house near the railway crossing—and antiques which include a grandfather clock that has been continuously ticking away the minutes since 1837—the elderly and lively Mr. McClure can recall when there were only a few houses in the now-thriving village, which, previous to being called King, was known as Springhill, because of the large number of springs in the area.

"There have been changes, all right," he says, glancing at the still clear photograph of himself and his dog taken when he was but one year old. "It's quite a distance from this"—indicating a candle-lighted lantern he used to carry as a boy—"to the new lights Hydro has just put up in our streets."

Arthur Brown, who came to the village 61 years ago at the age of five, goes along with that. Known as the "Old Lamplighter," Mr. Brown at one time looked after the community gas plant, and in that capacity was responsible for lighting the gas lamps on the village streets.

"I liked the job," Mr. Brown recalls, "but those kids! A bunch of them used to follow me around and blow out the lamps after I'd light them. It kept me going around in

circles."

He'll choose the new lights every time, and he, like the rest of the King City folks, takes a real pride in his new status as a shareholder in a brand new municipal Hydro system.





Shown on his regular constitutional, 91-year-old Andrew McClure, far left, is unofficial village historian. Former lamplighter Arthur Brown, left, points to a new street light—a considerable improvement over gas lamps he used to light. King City is a friendly place, as grocer Robert J. O'Reilly, lower photo, suggests as he helps a young shopper. As chairman of village trustees, he heads new Hydro system.



SALTY TALE THIRTY MILLION YEARS OLD

by Gordon Murphy

Salt, like electricity, is something we are inclined to take for granted. But from time immemorial it has played a leading part in man's history, religion and customs.

Lot's wife became a legend when turned into a pillar of salt, and the belief that spilled salt brings misfortune was immortalized by Leonardo da Vinci when he depicted an overturned salt cellar before the figure of Judas Iscariot in his painting of the Last Supper.

Some of us still toss a pinch of salt over the shoulder after accidentally spilling the stuff. And some take such beliefs "with a grain of salt." Others condemn the superstitious ones as "not worth their

salt."

Salt is found in all living organisms, and is essential to the physical well-being of men and animals alike. Its countless uses range from food seasoning to the raw material for precision optical instruments. Salt consumption in Canada averages about 1,635,000 tons a year, with about half of that total going into chemical plants and emerging in such forms as soaps, baking soda, washing soda, glass, insecticides and a host of other products.

Salt is a mineral, and, in its pure form, contains the elements sodium and chlorine, two of the most important raw materials in the chemical industry. It is obtained from two sources in nature—by evaporating natural brine, and by the direct mining of underground rock salt deposits. The evaporating method goes back to ancient times, and solar heat was the original evaporating agent before someone thought of speeding up the process by boiling the

Salt was first produced on a commercial basis in Canada in 1820, when a spring of strong brine was discovered on the Red Deer Peninsula of Lake Winnipegosis, in Manitoba. Salt was made at this spring for more than 60 years simply by evaporating the brine in big iron pots over wood fires. Production was about one hundred tons of salt a year, which is about what a small modern plant turns out in a day.

Something of a salt rush was sparked in Canada in 1866 when a solid bed of rock salt was accidentally discovered 964 feet below ground at Goderich, Ontario, by a prospector drilling for oil. This was the beginning of the Canadian salt industry, and the first in a series of discoveries which revealed the vastness of the Ontario salt beds—an area which extends southward from Inverhuron to Lake Erie, and westward from the vicinity of London almost to Lake Michigan, in one great saucer-shaped formation 800 feet underground around the edges and 5,000 feet underground at the center.

In the Windsor area, site of the Canadian Rock Salt Company's Ojibway mine, which turns out more salt than all other Canadian salt works and salt mines combined, the main salt bed is 250 feet thick. The first salt mine in Ontario, and the second in Canada—the other being at Pugwash, Nova Scotia—the Ojibway mine was opened in 1955, and is capable of producing more than one million tons a year.

Except for the rock salt mined in Ontario and



lova Scotia, all the salt produced in Canada is made y evaporating brine. The problem of getting brine combeds of dry salt as far as 3,300 feet underground and anywhere from 250 to 500 feet thick is solved y sending water down into the bed and pumping up again after it has dissolved all the salt it canold.

In today's plants, the evaporating is done in huge acuum pans shaped like cylindrical tops, ten to 18 et in diameter, and 60 to 80 feet high. They opere on the principle that the lower the pressure over liquid, the lower the temperature at which it will oil. So effectively do they work that the brine, oiling vigorously inside them, is hardly even hot.

This process yields fine salt, the starting point for arly all refined commercial salt products, including e variety that finds its way, free-running and iodized, our tables.

Rock salt, as distinguished from the product of the

Being banished to the salt mines can't be so bad if the Ojibway mine near Windsor is typical. The mine is clean, well-lighted, and has a constant comfortable temperature with low humidity. Photo shows a drill jumbo and undercutting machine preparing face for blasting to follow.

vacuum pan salt plant, is salt as nature formed it in underground beds or in domes millions of years ago. Geologists believe that the great salt beds of Ontario are 300-million years old, and were deposited from a sea which at that time covered what is now inland North America.

The principal uses of rock salt are as a raw material for the production of chemicals, for winter highway maintenance, for road stabilization, for fish and hide curing, and refrigerator-car icing. Production of rock salt in Canada is about twice that of evaporated salt.

The big salt bed at Ojibway didn't attract too much attention as a potential salt-producing centre



until about 1950, principally because rock salt mining must from the very nature of salt be a dry process. And until very recently, there was no safe and economic way to sink a dry shaft through strata, which for part of the way down are porous, water-bearing formations, such as exist at Ojibway.

Use of a technique known as "The Poetsch Freezing Method" finally solved the engineering problem. The whole area of the shaft site, plus a ten-foot radius, was frozen solid by artificial refrigeration to a depth considerably below the trouble spots, and the shaft was then sunk through the frozen column.

There are now two such shafts at Ojibway—a production shaft of 16 feet inside diameter, and an access shaft of 12 feet inside diameter, both to the 1.100-foot level, and concrete lined.

Descent into the Ojibway mine is swift. In a matter of about 60 seconds, the cage opens on a world in which the floor, walls and ceiling are solid salt. The mine is completely mechanized, and is naturally air-conditioned, remaining at an even 60 degrees F. regardless of the temperature on the surface. The mechanization includes the use of 18-ton rear dump haulage units to carry the rock salt to crushers from the mine faces, where the loading is carried out by units capable of handling large lumps and loading at the rate of 14 tons a minute.

Ojibway is what's known as a "room and pillar" mine, meaning that equally spaced tunnels are driven through the salt bed in one direction and then the walls between the tunnels are broken through at regular intervals to make cross-cuts that run at right angles to the first ones. Areas mined out are called rooms, and the blocks left intact are called pillars, since their function is to provide support for the mine roof.

After the mining cycle, consisting of undercutting, drilling and blasting, the salt is crushed to a workable size and loaded into hoisting containers for the trip to the surface.

After it leaves the mine, the salt is crushed, screened and stored. The seven-storey Ojibway rock salt mill has been likened to a giant salt shaker in which, by means of vibrating screens, the product is separated into basic grades, with the screening operations starting at the top. The finer the grade, the lower the mill level at which it is taken off.

From the mill, the salt moves to the company's bulk storage building, where railway box cars and trucks are loaded through chutes. Or a conveyor belt may carry it over a 750-foot causeway to the company's dock in the Detroit River, where freighters, loading up to 6,000 tons, take it through the St. Lawrence Seaway to the markets of the world.





Dramatic underground view, opposite page, shows salt being conveyed to production hoist. In top photo, mine face has been blasted and salt is being loaded on diesel trucks used underground.

These giant evaporator "pans" (left) represent another important method of obtaining salt. Photo was taken in Windsor plant of Canadian Salt Company, where brine is evaporated to produce fine salt. Lower photo shows an equipment maintenance area deep within Ojibway rock salt mine.



This electrically-operated service hoist is mine's lifeline. It transports men and material to and from various mine levels.



ELECTRICITY ON THE IOR

Visitors to the Ojibway Mine are always impressed with the high degree of mechanization in the underground workings. And electricity plays a major role. Mine Manager W. M. Rice says, "We have so much electrical equipment, there is very little manual work involved."

Electrical applications include:

- Hoists in the production shaft and access shaft, described by Mr. Rice as the mine's life-lines.
- · Lighting in 23 miles of passageways.
- Jumbo drills used at the mine face.
- · Loading equipment at the mine face.
- Fans throughout the mine.
- · Underground conveyor belts and those in the mill and storage area totalling more than 5,000 feet.

Altogether, the Ojibway Mine utilizes some 4,000 kilowatts of electrical power in its various workings.

IN JAPAN THEY CALL IT ...



The above is as close as the two-man news team could come to "Ontario Hydro" in Japanese. They are shown on the job, below, with A. D. Camp, Hydro's supervisor of audio-visual communications.

Sometime this winter, film glimpses of Ontario Hydro installations on the Niagara River will be flashed on to the screens of 40 million Japanese television sets.

Views of both Sir Adam Beck plants and other Niagara Falls attractions were taken recently by a hard working, two-man Japanese TV crew. Ken Kojima, 29, cameraman, and Satoshi Seto, 35, reporter and script writer, are handling the Canadian assignment for Fuji Television Corporation, one of four private networks in Japan. A fifth is state-owned.

Hydro's generating plants on the Niagara will be featured, along with a host of other Canadian subjects, during a series of 13, 20-minute programs on Canada—its economy, people and scenery.

Fuji employees Seto and Kojima spent about 40 days in Canada, travelling extensively from the West Coast to the Maritimes, and as far north as Frobisher Bay (for films of the Eskimo). The tour was arranged by Canada's Department of External Affairs.

Kojima filmed the exterior of S.A.B. No. 1, and at S.A.B. No. 2 he took exterior views, pictures of

the river around the tailrace section, and views of the generator floor and control room. He also exposed film from the Maid of the Mist, from the edge of the Canadian Falls, and from the new 325-foot Seagram observation tower.

Like most visitors, the Japanese were overwhelmed by the Falls. They were impressed, too, by the degree in which the river's power potential has been developed. And they hadn't expected to find big power plants so close to heavy industry. In Japan, they said (through an interpreter), most hydraulic plants were in the mountains, long distances from load centres.

For Seto and Kojima the trip was their first outside Japan. Both found it hard to believe Canada was going through a belt-tightening period. "We haven't seen much evidence of austerity here," they quipped. They found this nation living at a very high standard.

Perhaps their main impression of Canada was its immense size. After pocket-handkerchief-sized Japan and its teeming millions they actually felt quite lonely as they drove from Banff to Calgary. They wondered where the population had hidden itself.





along hydro lines

pronto Hydro Manager onored by A.I.E.E.



Harry Hyde, general manager and chief engineer of the Toronto Hydro-Electric System, has been transferred to the grade of Fellow in the American Institute of Electrical Engineers "for contributions to the technical and management phases of a large municipal electrical system."

Born in Odessa, Russia, in 1905, Mr. Hyde graduated from

the University of Toronto in 1926 with the B.A.Sc. degree in electrical engineering. Except for service with the Royal Canadian Engineers during World War II, he has been with Toronto Hydro ever since.

Mr. Hyde is a director of the Canadian Standards Association, vice-president of the Electric Club of Toronto, a past president of the A.M.E.U., and a member of the Association of Professional Engineers of Ontario. He has also served on the A.I.E.E. Transmission and Distribution Committee.

asibility Studies Launched r National Power Grid

Preliminary studies on the feasibility of a national power grid have been assigned to H. G. Acres and Company Ltd., Niagara Falls, Resources Minister Hon. Walter Dinsdale announced recently.

"The power grid," Mr. Dinsdale said, "with its accompanying super-high voltage transmission line service, will meet the true economic development of our national power resources on a Canada-wide basis, and will, in effect, allow the direction of power for industry anywhere in the country."

mmercial Electric oking Seminar Held

"Food service establishments represent about seven per cent of all commercial establishments," C. A. Wright, commercial and industrial sales officer, Ontario Hydro, told utility and Hydro sales staff attending the commercial electric cooking demonstration held in London, Ontario, recently.

About seven per cent of all food service establishments are all-electric, and approximately 60 per cent are partially electric.

'Electrical utilities find commercial cooking a load well worth promoting, because it pays off richly



Chinese food, pre-cooked and frozen a few weeks earlier, was served to utility and area sales staff at the luncheon held in conjunction with the commercial electric cooking presentation in London, Ontario, recently. The food was reconstituted in seconds in the microwave at the rear of the serving table. Being served are, from left: Bob Webb, Peterborough P.U.C.; Doug Reid, Ontario Hydro; Bill Hales, Belleville P.U.C.; C. W. Booth, Ontario Hydro; and Gordon Sharpe, Chatham P.U.C.

in revenue and satisfied customers. Commercial cooking is a load which can help commercial kilowatthour figures occupy a prominent spot in overall sales," he said.

The program for sales representatives included extensive study of the market for commercial electric cooking equipment, and the most effective means of developing that market.

The training session preceded a two-day seminar for food service operators. The London and District Branch of the Canadian Restaurant Association sponsored the presentation, in conjunction with London Public Utilities Commission, participating manufacturers, and Ontario Hydro.

Further Honors Bestowed On Former Chief Engineer



Latest honor to be bestowed on Dr. Otto Holden, who retired as Chief Engineer of Ontario Hydro in 1960 after a fortyseven-year career, is an honorary membership in the American Society of Civil Engineers. He is shown

(left) receiving the diploma from G. Brooks Earnest, president of the society. Earlier this year, Dr. Holden received an honorary Doctor of Science degree from the University of Waterloo.

Charles Caton Skinner Dies at Schreiber

Charles Caton Skinner, 74, a member of the Schreiber Hydro-Electric Commission from its formation in 1949 until his retirement in April, 1961, died recently at Schreiber. He had been chairman of the commission from 1951 until his retirement.

Born at St. Marys, Ontario, Mr. Skinner had resided at Schreiber since 1901. Active in o.m.E.A. affairs, he had served on the District 3 executive, and he was made an honorary member at the 1961

annual meeting.

In the insurance business in private life, Mr. Skinner had served as reeve and councillor, and he was a member of the original town-owned Light and Power Commission. He was a Mason and served as community librarian for 52 years.

PRESS COMMENT

Attempting to formulate a policy for placing service wiring underground, the Metropolitan Planning Commission of Saint John, N.B., prepared and circulated a questionnaire to discover the experience and personal reactions of other municipalities to this type of distribution system.

In the Listening Post, a digest of municipal news published by the Canadian Federation of Mayors and Municipalities, John Hendry, Senior Planner for the city of Saint John, summarizes the results. Here are

some excerpts.

"Towns chosen for the survey are widely scattered throughout Canada, but, as selection was based mainly on previous knowledge that some degree of experience had been gained, approximately half are situated in Ontario. This Province has taken an undisputed lead in this form of servicing. Of the 33 questionnaires which were originally dispatched, 29 were returned completed, a response of almost 90 per cent.

... "The cost of servicing per lot for an underground project is closely related to the nature of the soil encountered. Estimates are fairly evenly divided between \$300, \$350 and \$400. . . . Installation costs range from 1.7 to 5 times those for a conventional

overhead design."

On the question of financing, the Listening Post

had this to say:

"Eleven of the respondents have no particular policy, presumably considering each case according to its individual merits; seven require the subdivider to pay the difference between an underground and an overhead scheme; and eleven offer a scheme whereby underground wiring is installed at no extra cost upon guarantee of an increased consumption.

"It is to these latter eleven towns that we must look for a lead in the future. . . . Although their policies may differ in detail, in principle they are the same. The subdivider is charged with the additional cost, but is offered a series of rebates, up to the entire extra amount for the incorporation in each home of electrical appliances which conform with accepted standards. Thus an "all electric" home will be provided with underground wiring at no extra cost, the utility company in turn benefitting through assurance of increased consumption in the future.

... "Both the Canadian Electrical Association and the Ontario Association of Municipal Electrical Utilities are involved in research into the different techniques available, and a study of their publications on the subject is most rewarding. Any examination of the subject must be entered upon with an open mind, remembering that the problems posed are not similar to those of an overhead system. The basic approach of primary and secondary systems may in fact need to be practically revised and a different concept arrived at. It is only through such unrestricted thinking that schemes will be produced to solve the old objection that underground wiring is impractical because it costs too much."

A recent issue of *Electrical World* carried this report of a speaker at the American Gas Association convention:

"Innovate or lose favor with the investor," a security analyst advised gas executives at the A.G.A. convention in Atlantic City last week. Kenneth Hollister, C. M. Loeb, Rhoades & Co., encouraged his listeners to consider seriously pushing on-site electrical generation or face the prospect of coming in second to the electric utilities. Marvin Chandler, president, Northern Illinois Gas Co., a leader in the on-site generation move, told his colleagues not to shy away from subsidies for electrical generation projects in the early years."

Harry Foy Appointed International President



Harry Foy, manager of the Electric Service League of Ontario, has been elected president of the International Association of Electrical Leagues, with head-quarters in New York City. It is the first time a Canadian has been so honored.

Mr. Foy was elected at the annual meeting, Chicago, in October. He had served as a member of the Board of Governors for five years previously.

The international association represents 63 leagues and associations in the United States, Canada and Mexico.

MUNICIPAL BRIEFS

New Hamburg P.U.C. intends to replace its present headquarters with a one-storey brick building at a cost of \$24,187. Lighting and electric heating will be installed by the utility.

Cascade is a word which is likely to be heard a lot more frequently in the months ahead. The Canadian Electrical Association plans to acquire ownership of the registered "Cascade" trademark to be used by utilities in the promotion of water heaters. It plans to issue the label to manufacturers whose units come up to fast recovery standards of the C.E.A.

Revision of the financial arrangements existing between the municipal utilities and the municipal corporations with regard to street lighting is being considered by Ontario Hydro in co-operation with the O.M.E.A. and the A.M.E.U. A recent revision of the Standard Table of Asset Lives, in which it was recommended that the street lighting depreciation rate be

increased from the present 2 per cent to 3.75 per cent, will be held in abeyance until the new studies have been completed.

Peterborough and North York Hydro commissions are among those giving serious consideration to regulations which would make underground wiring mandatory in new subdivisions.

Electricity powers progress will be repeated as the theme of this year's National Electric Week, February 10-16. Observance is scheduled each year to coincide with Edison's birthday. Its purpose is to focus attention on the electrical industry and electricity's contribution to progress.

Ontario Hydro's Municipal Service Department and its associated Regional Consumer Service staffs must have been exceptionally busy this year. Up to the end of November they had processed over 300 municipal utility capital budgets for approval of the Commission, an all-time record number. It is expected that by year end over 90% of utility budgets will have been approved. The majority of the few remaining utilities are relatively static, thus not requiring budget approvals on an annual basis. In addition, 82 general retail rate adjustments were presented to, and approved by, the Commission, as well as 240 individual decreases in residential heating rates—all this in addition to "regular business".

Sarnia Hydro has announced plans to construct a new \$350,000 service centre with work to commence early next spring. Expected to contain some 30,000-square-feet of floor area, the centre will include a garage, warehouse and service facilities.

New Toronto Hydro commissioners, council members and industrial officials recently visited NPD, Canada's first nuclear-electric plant, and inspected the Chalk River Research Centre of A.E.C.L. A similar group from Etobicoke toured the projects earlier.

Pigeons cooing about the Port Arthur P.U.C. building are creating a nuisance, and the police have been empowered to "trap, remove or exterminate" the feathered offenders. "Pigeons" inside the building recently voted in favor of wearing distinctive uniforms. A poll revealed that 11 of the girls employed in the various P.U.C. departments would like to wear uniforms, nine are undecided, and three have already devised their own.

Etobicoke Hydro, in co-operation with Ontario Hydro, is negotiating with a development firm for an all-electric subdivision which would include, in the initial stage, 188 homes and a 130-suite apartment building. In negotiating the project, it was recognized that Bronze Medallion subdivisions, with most homes gas heated, offered insufficient long-term load security. Public acceptance of electric heating and lower rate levels made it possible to negotiate for all-electric sub-divisions.

Dryden Hydro is offering a special discount of 25 per cent off the standard temporary service rate for elec-

tric heating for purposes such as plaster drying during construction of homes and apartments which will be heated exclusively by electricity upon completion—subject to a maximum of six months in each case.

Downtown Guelph is being gradually transformed to underground distribution. Local Hydro takes advantage of other work being done to extend its own system, and as new buildings go up they are supplied with underground services. Eventually they will all be tied in with a general underground system.

Ajax Hydro has announced a new financing program whereby fast-recovery water heaters may be purchased on the bi-monthly power bill. Or the units may be rented at \$1.50 per month. Chairman E. D. Steer also announced a program for financing improvements to home electric services, including wiring and breaker-type entrance panels.

Oshawa and district appears to be among the leaders in developing the electric home heating market. There are 31 all-electric homes within the city proper and 28 in the immediate vicinity, as well as five commercial buildings, three churches and an apartment building. Several other projects are planned or under construction.

Editors note: Last month we mentioned Beachville celebrations as marking 50 years of Hydro. In fact, these celebrations were held 25 years ago when the system was 25 years old. Our explanatory footnote got lost in the shuffle.

Hydro Goes To The Fair



Autumn is fair time across the province, and many municipal utilities as well as Ontario Hydro, find them a good medium for keeping the community in touch with Hydro and its services. Display above, by Port Hope Hydro at the Port Hope and District Agricultural Fair, featured lighting, water heating and space heating. Shown assisting a visitor are Richard Symonds (left), office manager, and John Hepburn, lighting consultant, Port Hope Hydro.

Electric Heating Rate Reductions Change Promotional Emphasis

In a speech prepared for delivery at the 3rd annual meeting of the Electric Heating Association of Ontario, held recently in Toronto, Gordon McHenry, residential sales manager, Ontario Hydro, noted that by the end of the year a majority of municipal

electrical utilities in the province will have reduced their electric heating rates to the 1 cent or 1.1 cent level, net.

He indicated that, as a result, the competitive position of electric heating insofar as operating costs were concerned, would be emphasized much more strongly in promotion and advertising during the coming year. "As a foundation for this," he stressed, "it is absolutely essential that municipal utilities widely publicize their reduction in heating rate as it occurs."

He suggested, further, that a strong effort will be made to gain a share of the mass housing market. To offset any reservations the project builder might have with regard to electric heating, he said, the E.H.A. will be prepared to provide a two-year guarantee of heating costs, providing the houses in a project are installed to Triple Seal Standards with separate metering for heating.

Coal Consumption Up With Low Stream Flows

Low stream flows this summer reduced output from a number of Ontario Hydro plants, particularly those on the Ottawa, Niagara and St. Lawrence Rivers, resulting in a higher than average coal consumption. During one week in September, the Lakeview and Hearn stations produced more than onefifth of the total energy generated in Hydro's Southern Ontario System.

To replenish stockpiles, which must be sufficient to last through the closed shipping season, Hydro was forced to increase coal orders for 1962 delivery by 700,000 tons.

These latest orders had to be filled from the United States. Due to prior sales, Nova Scotia producers were not able to supply any additional tonnage before the close of navigation, beyond the 250,000 tons ordered early in the year.

Young Plowman Wins Hydro Prize



Top plowman in the under - 21 - year - old class at the 1962 International Plowing Match, held in Grey County, was 16-yearold Thomas L. Hunter, R.R. 3, Hagersville. He is being congratulated by Lt.-

Col. A. A. Kennedy, Ontario Hydro Commissioner, who presented the Hydro prize—a portable electric barn heater—to the winner at the awards banquet.

Western Region Welcomes Its 80,000th Customer

The desks are coming out of an old one-room building on Highway 22, near Strathroy, and what for many years has been SS 10, Adelaide Township, is being converted to a woodworking shop for the making of rustic and period furniture.

Proprietor of the new enterprise, Everett Smith,

expects it will become self-supporting by spring, and that his one-man venture will eventually employ others.

An experienced carpenter and cabinet-maker, this craftsman, with enough confidence in the future to set out on his own, became Ontario Hydro's 80,000th customer in the Western Region. He plans to combine his own personal skill with the speed and efficiency of modern electric tools.

Sunshine Special Ends Dec. 15



Top quality electric blankets like this one are the incentive being offered potential electric clothes dryer buyers during the current Sunshine Special dryer promotion. Ann Doidge of Ontario Hydro's Sales Division, and D. J. Gordon, the Commission's executive-director-Marketing, posed for this picture to remind prospective buyers that the campaign ends December 15.

Canadian - U.S. Symposium On Electrical Insulation

The National Research Council's associate committee on electrical insulation will combine with the American Institute of Electrical Engineering in sponsoring a joint symposium on electrical insulation to be held during the 1963 summer meeting of the A.I.E.E. The meeting will be held, June 16-21, in Toronto.

Plans call for the N.R.C. committee to provide the program for one session with the A.I.E.E. arranging the other section. A. W. W. Cameron of Ontario Hydro's Research Division is the co-ordinator with the local A.I.E.E. Arrangements Committee.

Outdoor Lighting Film

Prepared by Manufacturers
Entitled "Facts of Light", and stressing the value of outdoor lighting in the prevention of accidents and crime, a 23-minute film or slide presentation with a recorded narrative has been prepared by the Lighting Division of the Canadian Electrical Manufacturers' Association.

The film deals with lighting of established residential streets, parking lots, industrial and business districts, parks and recreation areas. It is being made available to utilities and allied organizations on a sale or rental basis for showing to civic groups.

At the recent annual meeting of District 8 o.m.e.a., held at Amherstburg, delegates were more than somewhat puzzled by the initials L.A.C. which were in-

OFF THE WIRES

scribed on souvenirs distributed at the convention. Conjecture ranged from "Leading Aircraftsman" to "Leamington Athletic Club". They had forgotten Amherstburg's pride in its claim to the first electrically heated home in Ontario. The initials stood for "Let's Abolish Chimneys".

As a counter measure to Hydro's "Sunshine Special" electric clothes dryer promotion, one gas company is offering enough soap to wash one ton of clothes with each purchase of a gas-operated clothes dryer. Presumably the soap is for use in a washing machine, and we wonder who will supply the energy necessary for its operation?

Beer recently cost Simcoe P.U.C. a hundred dollars and nobody got a drink. It cost the commission that much to erase the word "beer" which was painted on the side of a 100-foot water tower by Halloween pranksters. Worse still, the utility was roasted by irate citizens who complained that their taps were not delivering the foaming brew.

We have always considered editing to be a highly personalized skill and one which has enabled us to regard automation with a certain amount of equanimity no matter how strongly we felt for those persons whose jobs were threatened by the relentless march of progress. But this composure was considerably shaken by a recent newsletter from the Publications Institute announcing the successful use of an electronic computer in editing manuscript.

We were somewhat reassured, upon reading further, that the computer's biggest potential in editing is for books and directories where time is not a vital



consideration. Complete relief came with the following statement. "While a computer can perform functions at speeds which are almost unbelievable, the time required to program a computer may be as much as 70 man years."

While we are a little hazy on the meaning of man years, it sounds like too much time to spend on a monthly publication. In any event its a sneaky business—how would a computer look with a cigarette in its input, a green eyeshade over its transistors, and a hat on the back of its big fat brain.

Our award of the month goes to Bill Strachan, a meterman with the Picton Utilities Commission, for a community contribution far above and beyond the call of duty. Mr. Strachan devotes his leisure hours to youth work, and he was guest of honor at a recent Picton Kiwanis Club get-together at which the town and county paid a surprise tribute to "a man whose community service inspired public recognition."

Honors included messages of congratulations from Prime Minister John Diefenbaker and from Ontario Premier John Robarts. More tangible recognition took the form of an all-expense-paid trip to the forthcoming Kiwanis International Convention, Atlantic City, and a boat, trailer and outboard motor presented by the town and county.

Bill's main work with the youth of the county, since he came to Picton eight years ago, has been in the field of swimming instruction and water safety. But he is also regarded as the county's top man in Scouting, and he organizes bicycle roadeos, children's Christmas parties, and outings for under-privileged children. He is a church elder and Sunday School teacher.

All-in-all, Bill's after-hour activities are unlikely to reflect anything but credit on the utility which employs him.

Electricity is a remarkable commodity, but, in the raw, it can perform some remarkable shenanigans. Take the case of an Iowa woman who returned from a trip to find three roast chickens, several baked eggs and a bin of baked vegetables in her refrigerator. All the food had been uncooked when she left.

Turned out that a lightning bolt hit a tree near the house and somehow turned the cooling unit into a heater, cooking all the food. Later the unit automatically returned to refrigerating and chilled the cooked food.

The Editor, ONTARIO HYDRO NEWS 620 University Ave.,
Toronto, Ontario

My address is incorrectly listed; please change it to:

NAME

COMPANY

STREET and NO.

TOWN or CITY

PROV.

Please return this, with your old or incorrect listing to The Editor.





If you know of anyone still using clothespins, do them a favour. Remind them of the free electric blanket offer at all stores displaying the Sunshine Special symbol Nov. 3—Dec. 15.

Sunshine Special is a shining example of co-operation between Ontario Hydro, Municipal Electrical Utilities, Manufacturers, Distributors and Dealers...reflecting a promise of lasting benefits for everyone.

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ONTARIO HYDRO NEWS

CONTENTS

- I Canada's Changing Churches
- 7 Power Systems Span Continent
- 10 Merry Christmas with a Twinkle
- 12 Remote Control Meter Reading
- 14 Speaking in Public
- 16 Window Wonderland
- 19 Security is their Business
- 21 Along Hydro Lines

THE COVER



In case anyone is puzzled by our cover subject—its just a door. Staff photographer Harry Wilson couldn't resist the color pattern reflected from a Christmas tree in Hydro Head Office building.

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Recent critical international events have once again brought us anxious and distraught to the warmth and glow of the Christmas Season and its message of assurance and peace.

We can make real progress in solving the many problems that will confront us if we will but learn from such experiences that goodwill and consideration for others go hand in hand in our quest for peace.

Over the years we have endeavoured to develop a family tradition in our Hydro organization, and in that spirit have tried to serve our host of customers. As people everywhere on this planet are inevitably drawn closer together, we have the opportunity and the responsibility to carry this spirit progressively to an ever-expanding community, and time is of the essence.

The members of the Commission and our senior staff all join me in expressing our warmest yuletide greetings to all the members of our Hydro family, both provincial and municipal, and to our pensioners. May we all be spared to devote as many years as possible to the maintenance and extension of our family relationship at every possible opportunity.

Monstrin.

Contemporary church design in Canada and in many other parts of the world has been called everything from revolutionary to revolution, for no type of construction provokes so much criticism as church architecture. Witness to this is the comment that echoes regularly throughout the land—"but it doesn't look like a church."

That is the traditionalist speaking, and what he fails to appreciate is the fact that the church architect of

CHANGING CHURCHES

today is trying to recapture the spirit of the great architecture of the past while avoiding at the same time the slavish copy of its form.

There is more, however, to this seeming conflict between spirit and form in modern church design than a desire to bring ecclesiastical architecture up to date. Church buildings of the past had a marked tendency to be dimly lighted, to be drafty and acoustically unreliable defects which were generally compounded by a seating arrangement almost certain to prevent a large section of the congregation from participating in the liturgy. The contemporary architect proceeds on the assumption that architecture is primarily a matter of the significant definition of space. Thus, the modern church seeks satisfaction of functional needs over and above adherence to a preconceived idea of what the building should look like.

Economy is also an important consideration, with rising construction costs strongly militating against a multiplicity of soaring arches and spires and other superfluous ornamentation.

Church construction, as such, has gone through four periods of architectural history, beginning in the early fourth century with the Basilica style. The Basilica design was followed for about 400 years and was succeeded by the Romanesque, which dominated the scene for about two centuries. Gothic design set the pattern for the next 400 years and was



"The builder knows he cannot confound the church with the house of men. because it is the house of God; nor can he detach it too much from them, because it is the house of the children of God. He must build it in the midst of their houses, but he must also separate it from them, so that the soul of the building allows the individuals and the community to withdraw themselves from the grasp of the profane."

Cardinal Lercaro



Magnificent interior of St. John's United Church, Hamilton, opposite page, illustrates warmth and versatility of wood. Freedom of design, economy and beauty contribute to wood's wide use in church architecture. Contemporary in design, Beth Tzedec Synagogue, left, Toronto, is imaginative blend of aesthetic and functional. Sanctuary seats 2,500, and building includes chapel, educational centre, banquet hall, library and theological

followed by the Renaissance style, a form which gradually evolved into the Baroque and Rococo - styles which eventually became known as the Classic style.

The character of the earliest churches and chapels in Canada was essentially French, since in most cases the builders came from France and brought with them the religious style of the particular area in which they lived. Most of these buildings were, at best, poor imitations of famous edifices of the past, and were located and built in a manner calculated more to overpower the surroundings and over-awe the people than to create a medium of contact between the congregation and the altar and between the worshipper and his fellow-worshippers.

The change that has taken place in church architecture in Canada since the end of World War II is essentially an attempt to blend the spirit of the past with the requirements of the present. It is, moreover, a result of the realization that a church building is for a definite group of people, a certain kind of people, in a particular set of cir-

cumstances.

The large number of immigrants, particularly Europeans, who have entered Canada since the end of the war has posed a considerable challenge for Canadian architects—that of putting into church buildings a form that leaves no doubt to the newcomers that it is a house of God and a gateway to God, embodying the spirit of the ancient architecture, to which they were accustomed in their homelands-and the youth,



PHOTO COURTESY OF ARCHITECTS, DUPUIS, DUNN & DONAHUE



Our Lady of Seven Sorrows Church, top, on Hobbema Indian Reserve, Alberta, is an excellent example of how familiar building forms can be utilized to achieve an atmosphere in harmony with culture of worshippers. Teepee steeple rises over entire sanctuary. Wexford Presbyterian Church. Toronto, left, is a 12sided structure designed to emphasize its "family" nature. Its semi-circular seating arrangement brings altar closer to congregation.



Octagonal Church of the Master, Scarborough, left, tastefully combines fieldstone, brick and concrete. Eight-sided design particularly suited square building site and permits seating of 450 worshippers within eight rows of the communion table. As an art form, mosaic can be traced back thousands of years, yet it is adaptable to contemporary architecture as centre photo suggests. Work was performed by Conn-Arts Studios, Toronto, on St. John The Baptist Church, Hamilton. Lower photo depicts interior of another "church in the round". Circular plan of St. James the Greater Church, Toronto, conforms with contemporary thought in church architecture wherein closer communion is sought between congregation and liturgy. At St. James, 800 people can be seated with no one more than 22 feet from the sanctuary.



PHOTO COURTESY CONN-ARTS STUDIOS



vigor and optimism of this new land which they have adopted.

The question as to whether the modern church should be built around the altar, is one of the big issues in church construction. Those favoring the centre plan contend that it ensures maximum and easy participation in the liturgy, while those opposed claim that the centre altar tends to create spectators, not participants.

Whatever the pros and cons of interior arrangement, however, there is general agreement that improved techniques and new and less costly materials have advanced church construction to the point where it is not merely contemporary, but is, in fact, a new kind of art and science of building. Coupled with this is the emerging belief that architecture, generally, is a social art intimately concerned with the life of the people it serves.

Seen in this context, new church architecture expresses in a dignified but fresh and stimulating way the faith of the ages in the manner of today.

And so the next time you see an unusual looking church, don't be too quick to condemn it because it does not resemble what the people of a hundred or a thousand years ago considered to be the right kind of place in which to worship God.

Instead, consider it from the point of view of cost, functionalism, adaptation to the environment and aesthetic design—then ask yourself: What should a twentieth century church look like?

The development of modern church architecture in Canada has been accompanied by a growing awareness of the contribution good lighting can make to the beauty and function of the church structure.

Traditionally, churches were illuminated by candles at the altar, and, in later years, candles in heavy and ornate fixtures fastened to the ceiling and walls. The twentieth century brought electric lighting, but very few basic changes to the design of the fixtures.

As a result, church interiors have frequently been dark and gloomy, with uninviting shadows in the corners, and insufficient illumination above the pews for comfortable reading.

Today, new churches usually have lighting systems which have been designed to augment the architectural beauty of the building and, at the same time, to provide ample light for visual comfort. In older churches, extensive programs of redecorating and relighting are being undertaken to achieve higher levels of illumination and better distribution of light.

The ornate fixtures of the past, which were regarded more as objects of beauty than as sources of light, are being replaced by new fixtures, often traditional in design, which have been engineered to modern illuminating specifications. Usually facilities are provided for decreasing the level of illumination during certain portions of the service.

In many churches, lighting fixtures are concealed behind pillars and beams, and indirect lighting is frequently incorporated into the design of the building during construction. Floodlighting may accentuate the beauty of stained glass windows, and often the exterior of the church, for the enjoyment of passers-by. Internal illumination captures all the beauty of the windows for those inside.

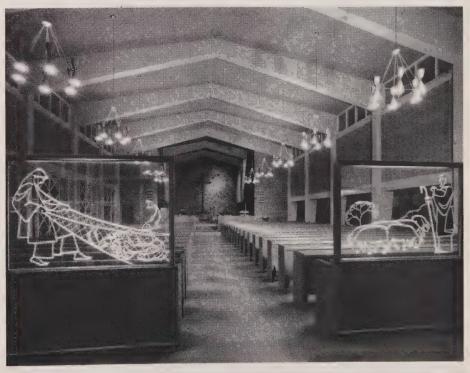
The sombre shadows common to churches of the past are being banished, as new and vibrant elements of lighting are introduced to Canadian churches of every architectural persuasion.

LIGHTING THE CHURCH

No where is the combination of functionalism and the aesthetic in modern church design more evident than in lighting. Gloomy interiors of yesteryear are giving way to visual comfort and architectural highlighting. St. Wilfrid's Anglican Church, Islington, below, is a fine example of exterior and interior use of light.



PHOTOS COURTESY COX & MOFFET, ARCHITECTS



Infra-red electric radiant heaters were mounted on high sloping ceiling and behind pulpit in Glenwod United Church, Sandwich West (top and centre left) to keep worshippers warm during service. Electric heating system in Faith Lutheran Church, Ottawa (centre right and lower) makes use of inconspicuous baseboard units.

HEATING THE CHURCH









Most churches—with their high ceilings, large window areas, poor insulation, and short occupancy periods—are a problem to heat.

Nearly 100 churches in Ontario have found the solution in some form of electric heating.

Infra-red radiant heaters, which warm people and objects rather than the surrounding air, have proved effective in older, smaller churches, as well as in new ones, used only on Sundays and a few times throughout the week. Heat is provided by the infra-red units only where and when it is needed; in the chancel for choir practice; around the font for a baptism; in individual rooms being used for meetings; and near occupied pews in a half-filled church. Operating costs, therefore, can be kept to an absolute minimum.

Other facts which lead to acceptance of infra-red heaters in small churches are: the saving in space ordinarily taken up by boilers, furnaces, ductwork, pipes and radiators; relatively low capital costs; ease of installation; and reduction in maintenance.

Larger churches in urban centres may be occupied for several hours every day of the week, and other forms of electric heating, such as baseboard heaters, wall panels, and floor or ceiling cable, have often proved entirely satisfactory. Units can be installed in any part of the church, without detracting from the building's architectural design.

Electric heat has uses in churches other than keeping the congregation comfortable. Thermostatically controlled baptistry heaters automatically control the temperature of baptistry water whenever needed. Electric heating cable embedded in steps, driveways and sidewalks ends snow shovelling and prevents accidents on ice or snow. And electric heating cable in the floor of the nursery protects the health of playing children.

One night last January the Power Authority of the State of New York called for help. They'd lost 1,000,000 kilowatts of generating capacity and needed some additional power in a hurry. Could Ontario Hydro help out? They did.

Tomorrow, it's conceivable that Hydro could be in a similar position.

Fifteen years ago an incident like this would have been enough to throw utility officials into a panic. Today they barely raise an eyebrow. In fact, it is usually only the people right on the job who realize immediately that the system is in trouble —because, through interconnections, most power shortages are automatically covered.

This seemingly magical state of affairs has resulted from the linking together of power systems through interconnections—an evolutionary development which has taken place over the past 50 years.

In the early days power systems were rudimentary, consisting of a single generating station serving an isolated consumer area. As time went on, improvements in transmission technology brought on the next step of interconnecting the individual stations into an integrated system. The process continued until we are now witnessing the phenomenal expansion from system to system.

It is worth noting that, in Ontario Hydro's case, the decision to standardize at 60 cycles gave a special impetus to the growth of interconnections with neighboring systems. Had this course not been taken none of the major links to the United States systems could have been made and Hydro would not be reaping the ensuing benefits today.

It is expected that, eventually, there will be a coast-to-coast interconnection across the United States with taps to Ontaro and British

POWER SYSTEMS JOIN **HANDS** TO SPAN CONTINENT

Columbia. In time, all Canadian systems may be part of this monster network.

Interconnections are made for two reasons. The primary objective is mutual assistance in times of emergency. Economics are a second important consideration. In the majority of interconnections emergency aid is provided on an entirely voluntary basis, that is, all the donors reserve the right to withdraw their help if their own system is jeopardized. Such drastic action, however, is seldom needed and, since tie-lines are "twoway-streets," all members do their utmost to help neighbors in trouble. Some interconnections now operate with more mandatory contractual arrangements. These are usually called power pools.

Interconnected systems react to trouble on a member system much the way a number of locomotives running on parallel tracks and cross-connected to each other by springs would act if one of them suffered a reduction in power. Just as the engine in trouble would slow down, and accept a partial tow from its neighbors through the springs, so the generators on a power system would slow down in the event of a sudden power shortage and supporting power would be drawn into the grid over the lines interconnecting the system

with its neighbors—the result being a partial "tow" until the trouble is remedied.

As with the locomotive analogy, all would help tow the faulty member through the spring connectors, not just the adjacent machine. The same is true of interconnected systems; all contribute to the support of any system in trouble.

What has just been described is the automatic and reflex action of a group of interconnected systems coming to the aid of a component system experiencing a sudden emergency. Aid, however, may also be scheduled ahead of time if a power shortage is foreseen.

This is what happened in the case of the Power Authority of the State of New York, referred to earlier.

PASNY needed 500,000 additional kilowatts to meet firm commitments to large power purchasers in the state. Hydro couldn't supply all the power itself, but, in effect, did so, by transferring power into New York State from Quebec and Northern Ontario.

While interconnections are designed primarily to meet such emergencies, they probably get more exercise in the economic sphere.

It stands to reason that if Ontario Hydro has to bring in units at R. L. Hearn G.S. to meet peak demand for only one hour in the afternoon, and that surplus power can be imported from Michigan for this period at lower cost, it will be more economic for Ontario Hydro to purchase U.S. power than to generate its own.

Conversely, when Hydro is enjoying good water conditions, millions of kilowatt hours of surplus hydroelectric energy, which would otherwise be wasted as spilled water, are sold to neighboring U.S. utilities to displace thermal generation and save coal.

Under an interconnection agreement, by which both parties in the transaction can benefit, the savings effected are split evenly between the two systems.

Interconnections also effect economies by keeping spinning reserve costs down.

Each power-producing utility must maintain enough generating power in reserve for meeting unexpected loads or emergencies. If it were a lone wolf, without interconnections, it would have to maintain a large amount of reserve—at least enough to replace its largest generator. But with interconnections, the level of reserve does not have to be so high.

To take advantage of these opportunities for economy, someone in each system has to know how much power is available for purchase and—to help others out—how much is available for sale.

At Ontario Hydro, this man is located at the Richview Control Centre, on the outskirts of Toronto. He's the pivot man for the system, the man who knows at all times just what condition the system is in.

When help is needed, the production man will normally seek it from systems in Michigan, Quebec, New York and the New England States. However, as of November 1, he can go further afield for assistance, because on that date these interconnected systems, known as the CAN-USE (Canadian -U.S. - Eastern) interconnection, effected a tie-in with the gigantic Interconnected Systems Group through lines in Pennsylvania. The resulting power network now stretches from Northern Ontario to the Gulf of Mexico and from the Atlantic seaboard to Montana. Its generating capability is about twenty times that of Ontario Hydro.

The effect of hooking up to this enormous complex of generation and load was immediately noticeable on the system frequency. On smaller isolated systems, the frequency with which the power pulses in the lines tends to be quite variable, reflecting all the sudden load demands made by the system's customers. As the system becomes a part of bigger and bigger interconnections the frequency smooths out, and, when an interconnection reaches the size of the one formed on November 1, the graph of system frequency becomes almost a straight line with only a little fuzziness. One practical benefit of this smoothing out is that electric clocks keep better time.

What of the future? Two main features are emerging as the most likely developments in coming years. These are extension of pooling arrangements, mentioned above, and extra-high-voltage lines linking large power pools to form cross country grids.

Growth of power pools will bring substantial savings in capital investments to member utilities because generation expansion plans will be shared on a more efficient basis than the present looser interconnection arrangements permit.

At the present time, extra-highvoltage (EHV) lines on this continent are few and far between, but before the 1960's are out we may well see fairly extensive EHV grids in Canada and the U.S. Whether the grids will develop along national or international lines is hard to predict, but it is a virtual certainty that by 1970 blocks of power dwarfing present transfers will be shunted between major power pools through these grids.

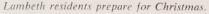
Whatever the course of future events, the incentives to interconnect will be basically the same, that is, to save money and improve security. As long as these stimuli remain, we can look forward to a continuing growth in the process of integrating power systems into more and more closely-knit interconnections.

When CANUSE (Canada-U.S.-Eastern) interconnection and the Pennsylvania-New Jersey-Maryland interconnection, effected a tie-in with the gigantic Interconnected Systems Group, November 1, 1962, area shown in color became a single power network stretching from Northern Ontario (Ontario Hydro) to Gulf of Mexico. While interconnected, Quebec systems are not yet operating in parallel with remainder of network. Existing power pools and interconnections are expected to tie in shortly so that, eventually, the network will stretch from coast to coast.

Interconnections enable participating utilities to assist each other in time of emergency and facilitate operating economies. Extensive E.H.V. interconnected grids in Canada and the United States are a likely future development.











AMERRY CHRISTMAS WITH

There's an energetic, community-wide effort

behind Lambeth's annual

yuletide festival of light and color.



The little western Ontario village of Lambeth annually celebrates Christmas with a festival of light and color that brings tens of thousands of visitors into town during December.

From dawn to dusk, a cavalcade of cars—sometimes four abreast—moves through the town. Buses travelling on nearby Highways Two, Four and 401 are re-routed through the village to provide passengers with a sort of bonus Christmas spectacular.

Television cameras provide added coverage of the twinkling panorama of lawn displays and richly-lighted homes.

How does a community of only 2,000 souls do it, particularly when it's located so close to London that outsiders may be inclined to overlook the fact of Lambeth's independence from the city? Well, you would have to list enthusiasm and planning as two vital ingredients.

The story begins nine years ago in the home of Ted and Ruth Bacon on David Street—most spectacular of Lambeth's Christmas thoroughfares.

"I had seen beautifully decorated homes in other towns and cities at Christmas time, and I thought I'd like to try the same thing on my own street," says Ruth Bacon. "As I talked about my idea to neighbors, they became enthusiastic too. I had a few decorating suggestions to start the ball rolling, and before anyone knew it we were in business, so to speak."

A person who can see a Christmas

candle lurking in a length of stove pipe ("Paint it and add a plywood flame," she suggests), Ruth contributed hundreds of ideas and patterns and a great deal of time and talent to her project, particularly during the first five years.

At first, many homes on David Street and neighboring Campbell Street decorated the exteriors of their homes. So many visitors from surrounding communities crowded in to see the holiday tableaux that, the following October, an organization meeting was held to discuss 1954

IWINKLE

holiday decorating for the entire village.

Eventually every home on David Street, and most of the other 500-odd homes in Lambeth, got the treatment. And the results have been spectacular.

Ruth Bacon has some valuable suggestions for other municipalities wishing to promote widespread Christmas decorating in their own communities.

"The month of June isn't a bit too early to start people thinking about Christmas decorations," she says. "Advertisements in the local newspaper showing a photograph of a well-lighted and decorated home and the caption 'This could be your home at Christmas time' might introduce the idea. Suggestions for installing adequate outdoor wiring (which would, incidentally, be useful for summer barbecuing in the backyard) and a few decorating hints would be helpful too. Perhaps the local electrical utility could promote decorative holiday lighting in literature with their monthly bills.

"The real work starts early in September," she says. "Someone, perhaps a retired person hired especially for the job, should visit individual families willing to act as co-ordinators for their own neighborhoods. The co-ordinators can hold origination meetings to settle details such as routes and park decorations. Local merchants will usually agree to decorate store exteriors and co-

operate on large orders for lighting and decorating merchandise.

"Many electrical utilities show the way by extensive, tasteful decorative lighting on their own office building and grounds, and in local park areas as well. The utility could also set up an inside display of all types of lighting equipment. This might include an explanation of weather-proof outlets, and the importance of Canadian Standards Association's stamp of approval on all lighting equipment."

Ruth adds a special plea for originality in holiday decorations, both inside the home and outdoors.

"Look through old Christmas cards for ideas. Work with simple materials. A beautiful cross made of wheat stalks, sprayed silver and mounted on a gable can be effectively highlighted with the proper use of floodlighting.

"A log with an axe embedded in it, and a painted plywood rabbit family can be charming, especially if it's backlighted with flood lamps.

"With colored cellophane and masking tape you can transform your garage into a cathedral.

"Snow men and snow forts on the front lawn are a natural, and chil-

dren love making them as their contribution to the family project."

While Lambeth illustrates what a community can do with a cooperative Christmas lighting program, there are other municipalities who are also very active.

Sudbury P.U.C., for example, sponsors a home lighting contest at Christmas in co-operation with the Sudbury Star. As well as encouraging attractive decorations, the contest focusses attention on the utility's adequate wiring program. Advertisements explain contest details and, at the same time, stress the importance of sufficient circuits, warn against overloading and over-fusing, and urge residents to use lighting equipment specified by C.S.A. as safe for use outdoors.

But regardless of the method a municipality uses to encourage community holiday decorating, one thing remains true, Ruth Bacon feels:

"All that people need is a little push in the right direction to get them thinking about original decorations for the exteriors of their own homes," she says. "Their creative enthusiasm will take over from there."

Toronto Township Hydro Sets An Example



Lambeth's Ruth Bacon might have had Toronto Township Hydro in mind when she said "many electrical utilities show the way by extensive, tasteful decorative lighting on their own office buildings and grounds." Like other Ontario utilities, Toronto Township Hydro strives to be a good neighbor and, where electricity is involved, sets the example.



METER READING BY REMOTE CONTROL



Elliott McBroom

Few facets of utility operation are more vital than metering, and among the people responsible for measuring the consumption of electrical energy, few subjects are more

in the limelight than the remote, automatic reading of customers' meters.

It was natural, therefore, that the progress-minded Association of Municipal Electrical Utilities should have included a discussion of this intriguing development in its Metermen's Workshop, held in Toronto recently.

Automatic reading isn't just around the corner, more than 150 participants were told by Elliott McBroom, meter engineer, Toronto Hydro, at the closing luncheon. Participants were drawn from municipal electrical utilities, Ontario Hydro and electrical manufacturers.

In his talk on "Automation as Applied to the Remote Reading of Watthour Meters," the conference chairman stressed that the friendly fellow who journey's from house to house reading meters, and doubles in brass as a utility's goodwill ambassador, would be making his rounds for a long time to come.

But he said it was a utility's duty to study every new and promising development and to explore every aspect of its potential.

Within the framework of his address, he said, automation meant "the automatic interrogation and feed back of digital information from a multiplicity of electrical integrating instruments at diverse remote locations to an electrical utility's data processing centre as an assisting function in customer billing and accounting procedures."

In other words, getting and using meter readings without having to look at the meters every time.

A number of potential advantages are inherent in the procedure. Reduced costs, speedier billing, and improved load-demand predictions were among the eventual benefits the speaker could foresee.

There are five steps from electric energy consumption to payment, Mr. McBroom pointed out, and progress has been made in four of them. The meter itself is automatic; computation

of bills is fast and accurate; preparation and delivery of bills is fully mechanized; and new equipment has streamlined record-keeping and accounting.

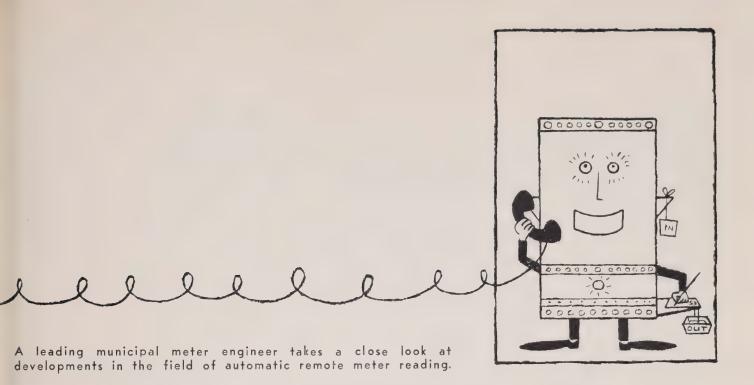
The gap, he said, was in uniting the automatic meter with the automated office.

Concern over this problem was far from new, Mr. McBroom said, since patents for various systems go back many years, and literature a full half-century. But general technological advances and more efficient office procedures had combined with competition to add a sense of urgency in recent years.

And the nature of the problem is a traditional one: it's technically possible, all right, but can one make it economically practical? The same forces that spur efficiency drives mean that utilities must watch costs carefully

"No equipment developed so far," he said, "offers enough economy even for widespread experimentation, but that feeling of urgency is very real."

At present, it was estimated that meter reading costs about \$1.20 per meter per year. And it would seem that \$10 or \$12 per meter for the addi-



tional equipment involved in automatic reading would be about the maximum capital cost a utility could tolerate.

But there was more to cost than that. Perhaps a somewhat higher cost would be well justified by other uses of the equipment involved and the information gathered by it.

Also, the certainty of getting readings when they were wanted was worth something. The problem of callbacks for meter readers could be solved in part by outside meters, but such a massive change-over was hardly feasible. And though actual reading took little time (if more than the 1.5 seconds an automatic device needs), a man still had to get to and from the meter.

What about the technicalities?

One way would be by radio link, which involves the installation of a transformer at each meter. Mr. Mc-Broom believed that cost pretty well eliminated this possibility—for the present, at least.

Power line carrier systems have too many variables and too little reliability. Here again, reliability could be measurably improved only by a good deal of costly equipment. Specially-installed telephone lines, a promising avenue of investigation, would need considerable switching equipment.

All these methods were technically possible and economically impractical.

"A fourth choice, that of using existing telephone lines, has much to recommend it," the speaker said. "Indeed, it is the only one that carries with it possibilities of economic feasibility and the only one which could reasonably be classed as complete automation of the meter-reading function."

An immediate drawback was the fact not every customer has a telephone. Therefore, some investigation would be needed as to the relative merits of leasing lines from the telephone company, and installation of special lines by the electrical utility.

Some modification to the meter itself would be required (in the register), but this and the installation of special equipment would probably be handled by the manufacturer.

The system would require a data processing centre at the utility, which would have to be capable of "dialing" the customer's number without ringing his telephone. While there would

be no ring, such equipment would have to defer to a busy signal like any other caller.

Ideally, said Mr. McBroom, this would be scheduled for the hours of minimum telephone traffic—probably 2 a.m. to 6 a.m. The greatest cost could well be the installation of individual units for "meter readout", the mechanical process of transferring a reading from the meter to the carrier system.

"But there is also the question of dependence on another company's equipment," he said, "and there is no guarantee that the telephone company would agree to do it."

One proposal would provide for the meter-reading function to be "piggy-backed" on telephone companies' insulation tests, which are carried out periodically on all lines in sequence.

Another factor worth considering, Mr. McBroom pointed out, was that once data processing was installed, the additional information made available could be used for a wide variety of functions.

In summary, he concluded, "Automatic remote meter reading is certainly not just around the corner."

LADIES AND GENTLEMEN . . .

Unaccustomed as you may be to public speaking, here's a formula to help get your message across while keeping your audience awake.

Professionals say it works.

HO HUM! another



"Ho hum!"

So you just turned down another opportunity to make a speech. Brother, you are missing the boat.



"Why bring that up?"

Making a speech gives you a chance to tell a group about your organization. You should not pass up the opportunity because the thought of speech-making terrifies you.



"For instance!"

Your competitor likes making speeches. He accepts the invitation you turned down and steals a march on you. While you get lost, he uses the public platform to communicate his ideas and the ideas of his organization.



"So what?"

Jump at a chance to speak in public. It can be rewarding for you and your organization. And with a little planning it's not as tough as it seems.

Thank you.

(Speaking time: 60 seconds.)



That one minute speech won't win any awards for public speaking, but it will help you make an effective speech. It's based on Richard Borden's famous four-point formula for transplanting an idea from your head into someone else's.* Professional speakers use it all the time.

The cryptic phrases on the opposite page describe the four stages of audience reaction that you will meet. They are clues to the four steps in organizing a good speech: You must waken up the audience . . . tell them why they should be interested . . . stoke up their interest . . . and motivate them to do something.

Let's take them one at a time.

1. Ho hum!

Your audience may be sleepy, bored or indifferent. You must kindle their interest right away.

If you are going to talk about weapons of war, don't say: "I came here tonight to address you on the subject, "Weapons of War."

Try this:

"Bows and arrows are a menace. We must ban them or mankind will be annihilated."

*"Public Speaking Listeners Like It!" Richard C. Borden, 1935, Harper & Brothers.

2. Why bring that up?

That's the question the listener will ask himself after you have grasped his attention. You must build a bridge to show why your topic should interest him.

Meet the problem head-on in the second section of your speech.

If you are talking about how unrest in Pango-Pango has cut off the supply of coconuts, say something like this:

"I bring this up because today you have to pay 25 per cent more for a coconut than you did last week. And next week, the United Nations will likely ask Canada to send troops to Pango-Pango to keep the peace."

3. For instance!

Now you've got to get down to cases. You must give concrete examples to illustrate your points. The more you have, the better the speech.

Let's say you are talking about the need for schoolboy safety patrols. You could give a long, dull recital of statistics about traffic accidents. But this is better:

"Last week six-year-old John Smith was killed trying to cross Maple Street.

"On March 23 Mary Jones was struck by a car near Victoria School and critically injured. She's still in a wheel chair.

"On January 19 Barbara Green was hurt right in front of Oak Street School. Her father can tell you. He's in the second row on my left tonight.

"In the past year 25 children have been either killed or injured in our community while crossing the street. That's as many as there are in my boy's classroom.

"How many of them did you know?"

For instances like these will make a dry-as-dust speech come to life.

4. So what?

That's the final question the audience will ask. You can answer them effectively by making sure your speech has a point.

Richard Borden suggests that you ask the audience for some specific action—"some action response which is within their power to give"—like Join! Contribute! Buy! Think!

To make a good speech you must be sincere, you must be enthusiastic and you must plan . . . plan . . . plan . . .

Keep in mind Winston Churchill's advice to after-dinner speakers:

"Say what you have to say, and the first time you come to a sentence with a grammatical ending, sit down!"



A dancing teddy bear accompanied by an orchestra of stuffed toys was a feature of Eaton's recent "Enchanted Forest" windows.



Eleanor Konkle uses her sewing room to outfit a dancing alligator for this year's College Street window.



Gum drops are building materials when Main store craftsmen make towers for "Christmas in Candilot." Towers flank ferris wheel in finished window, right. Worst is over when construction starts.

Those fabulous animated fantasies which appear in downtown shop windows at Christmas time are an art in themselves and, to learn something of the finer points, we visited the masters.

Undow Wonderland

Children have an enviable ability to lose themselves in a world where fantasy is the only reality—oblivious to the discordant babble of Christmas downtown.

But to help them do so year after year without repetition takes a collection of creative minds, many dozens of technicians and countless sheets of paper that start out a frighteningly sterile white and end up as scribbled, crumpled balls.

Watching the people who design and construct Eaton's windows in Toronto as Christmas approaches, one gets the erroneous impression that the whole procedure is one of effortless perfection. Rushing and lastminute panic are nowhere in evidence—just a sense of quiet urgency.

"By the time we're carving, painting and dressing," the people behind the windows explain, "the hard part is over. The soul-searching, the revisions and the differences of opinion happen before we go from paper to three dimensions."

And, each will add, you never stop planning for Christmas.

The first thing needed is a theme and, while it's generally a place, as with the recent "Enchanted Forest" or this year's "Christmas in Candilot," sometimes a "period piece" is the thing. One effective window series depicted the Victorian era.

But extreme simplicity isn't enough. For children, enchantment is mandatory, and this involves considerable thought.

This year, one window in the College Street store features swans pulling a sled over a frozen lake, with a delightful assortment of dancing animals scattered over the land-scape.

Designed by the husband-and-wife team of Ted and Eleanor Konkle, the window began this time with the figures—the setting came later. Other times the reverse is true.

Each character in the window pirouettes on its own central brass rod. The electric motors are concealed by mounds of "snow."

To protect what the designers call the unity and honesty of the illusion, everything will be done in turquoise, pink and white. It would be inconsistent, they say, to have a natural-





Reindeer ready for fantasy-inducing coat of paint has its antlers installed by Ted Konkle of Eaton's husband-and-wife team.

colored alligator dancing in a pink skirt: children "wouldn't believe it." Nor can they look like stuffed toys, since a stuffed toy is something real to a child.

But adults are attracted, too. For them, life-size is the least effective. Characters in the mechanized windows are seldom higher than 18 inches when they represent people. Grownups demand fine detail—and get it.

The Konkles make the figures in their Long Branch home, west of Toronto. Ted has worked for Eaton's since his graduation from the Ontario College of Art 12 years ago. Eleanor, a former employee who still does freelance work for them, is a graduate in art and archaeology.

Styrofoam is the substance used for the bodies of the figures. Looking for all the world like solidified soap suds, the white substance comes in large blocks.

Ted uses a hot piano wire in the fashion of a jig-saw to make the larger pieces, trimming with a knife.

"It's just wonderful," says Ted.
"It's incredibly light in weight, but impossible to paint. The technique is to cover it with glue-soaked strips of paper towelling. This smooths out joints and makes the figure paintable." The velvet-like finish is made of flocking, a short rayon fibre used for many years on "plush" Christmas cards. This material is sprinkled on the wet paint.

In the main store triple window, where the animated figures are ordered from an outside firm, the emphasis again is on fine material for clothing. If poverty is to be indicated, as in a recent Victorian tableau, it's done with color. On finer clothing, embroidery is really that; tiny pearls are individually stitched on.

This year's mechanized "Candilot" theme involves 20 floats moving on a chain-drive. Scaled down to suit the 14-inch figures, their design was more than a matter of size; the executions had to be simple because of the smallness of the floats.

Lighting, a vital part of effective window dressing, comes close to the end. Special filters and carefullycontrolled intensity help set the mood, and highlighting has to be so unobtrusive as to blend in smoothly.

Music, always wordless and care-

ELECTRICITY ON THE JOB



Strange though it may sound, it actually takes more than true depth to give the illusion of space. Part of what is needed for this feeling of "added dimension" where Christmas shop windows are concerned is carefully-controlled lighting.

Colors are meticulously chosen for lighting, but equal care is taken in getting the precise intensity required.

"And without electricity to power our windows," one display executive explained, "our enchanted worlds in miniature would become simply appealing tableaux." The windows must not look like real life—nor can they look like pictures. Even where the theme is a time period, these windows have to be places rather than things.

Compact electric motors to rotate the ferris wheel and make pink ostriches dance; precisely-set illumination to color the air of the unreal land; tiny silent motors to make dolls dance as no "real" doll can—these are the functions of electricity in making a Christmas treat children can rely upon to delight them year after year.

fully chosen, helps hold the attention originally drawn by the motion and color.

So popular are the mechanized windows with amateur photographers that, for one full hour on a prearranged date, motion is stopped. Cards in the windows suggest best exposures and settings for camera clubs and others.

"Candilot," like most of Eaton's major mechanized windows, will go "on the road" after this season, to other of the company's locations across the country. Life expectancy

of such a window is about five years.

Windows are constantly watched for prompt detection of rare mechanical failures. Dry runs are held as a matter of form, but in reality "all the bugs are worked out on paper."

From the street side, observation is just as constant, with countless thousands of parents showing their children the delights of the mystic quality of Christmas.

And, of course, many thousands of adults, unaccompanied by off-spring, "just happen to stop" beside the big windows.

SECURITY IS THEIR BUSINESS

Experts in the field, the men behind the security badge are charged with the task of safe-guarding Ontario Hydro personnel and property across the province.

With total assets in the neighborhood of \$2,800,000,000, a staff of 15,000 and some 92,000 acres of property located from one end of the province to the other, Ontario Hydro is naturally very much concerned with personnel and property protection.

And the men who go quietly about this gigantic task in the grey-blue uniform of the Hydro security officer are backed up by a confidence that comes with experience on some of the world's foremost police forcesthe R.C.M.P., the London Metropolitan Police and Scotland Yardto mention a few.

Most of the staff, which is distributed between the regions, head office, A. W. Manby Service Centre, and construction projects, are hand-picked military or police veterans. Some are specially qualified and trained Hydro tradesmen.

Sworn in as special constables and appointed guards under the Public Works Protection Act, they are not only qualified first-aid men, but firefighters as well. Many have graduated from military security and counter-sabotage courses. Through their contacts, they maintain valuable associations with police, the armed forces and other security groups, and their public service work has been commended by outside bodies.

The security men are experts in fingerprint and footprint work, ballistic tests which show which rifle didn't shatter an insulator (they leave it to the police to say which Through the long hours of darkness, Ontario Hydro security officers keep a watchful eye on Commission property across the province. Officer shown here is making sure everything is in order at DeCew Falls Generating Station.





R.C.M.P. VETERAN HEADS SECURITY

Donald F. Robinson, Ontario Hydro's director of Security, has seen a lot of life in his 48 years of military and police service around the world. But he still expresses a tolerance and faith in his fellow man that stands him in good stead in his security post.

He was called in to help plan the Security Division in late 1949, when Hydro had outgrown the ability of police forces to provide security measures as they had during the war. In 1953 he became director, succeeding Col. M. H. Vernon.

He had served with the Gordon Highlanders and Royal Flying Corps in World War I, and later with the Allied Police Commission in the Middle East, the Black Sea Army and the Indian Expeditionary Force.

Mr. Robinson came to Canada in 1922 and

began an adventurous 21 years with the Mounties He went overseas again, after leaving the R.C.M.P., to Canadian Military Headquarters in Britain, and on his return became Port Dalhousie's chief constable and, later, chief security officer with Atlas Steels in Welland.

His military and police careers taught him to pick his men in Security.

"We have a fluid setup which can adjust to meet developing situations, a nucleus around which we can build a trained body at short notice to meet national emergencies," he says.

"That requires good men, and we have them. A member of Security Division knows what he is trying to do and sells it to others. He leads, he doesn't push. He is more efficient, more effective, because he is more diplomatic."

one did), and handwriting analysis that haven't missed yet in court.

During the frequency standardization program, their work saved the Commission an estimated \$1,000,000. Here their document examinations brought a string of convictions against shady dealers and con men which effectively persuaded others to stop trying to swindle Hydro.

They've learned thieves are especially fond of Hydro's copper and aluminum conductors, and will lift just about anything that isn't nailed down.

In one short spell in 1955, for example, thieves got away with a 50-foot pole, a transformer, a no-parking sign, two lanterns, a safe containing \$130, two tons of aluminum conductor and, believe it or not, a transmission line tower. Some ambitious scrap metal sellers actually toppled the unused tower and chopped off a few sections before a farmer alerted Hydro and they were scared off by

the arrival of security investigators.

Then there was the man they caught fishing at the Niagara Floral Clock pond where tourists like to toss coins, which the Commission turns over to charity. He had a sackful of money weighing almost 60 pounds.

And there was the time they caught a ship.

A U.S. freighter dragging her anchor had snagged an underwater cable and cut off power to Pelee Island. Although weather and other factors delayed the investigation for six months, they were able to find the one ship among hundreds that had passed the spot, and prove the owners were responsible for restitution

Sometimes the work is rough. A former Scots Guard and Glasgow policeman guarding the R. L. Hearn plant once disarmed a 240-pound junk dealer who came at him swinging an iron bar. He spotted the man

80 pounds, wrestled him to the ground, and hauled him to a police station.

But most of the Division's work is preventive, which includes teaching other Hydro employees to help protect Commission property as they would their own homes.

Just as you'd worry about a stranger in the backyard, Hydro wants to know who is where and why—and make sure nobody's there unless he should be.

As you'd take the mower inside rather than leave it on the lawn overnight, Hydro makes sure it has all its equipment and material in the proper, safe place. And even when things are locked up correctly, you don't advertise the location.

Perhaps preventive security is best summed up in the true story about the prize-winning essay on guarding a work site against fire. It read, in its entirety:

"Keep awake and watch it."



along hydro lines

R. J. Boyer Named to Commission



Robert James Boyer, M.P.P. for Muskoka and editor of the family-owned Bracebridge Herald-Gazette, has been appointed Second Vice-Chairman of Ontario Hydro. He succeeds William G. Davis, M.P.P. for Peel, who has been appointed Minister of Education by John P. Robarts, Prime Minister of Ontario.

A member of the Ontario Legislature since 1955, Mr. Boyer has been active in committee work and continues as a member of the select committees on the cost of drugs and manpower training. He has served on every standing committee of the Legislature at one time or another, and he acted as Deputy Progressive Conservative Party Whip for three years.

Born in Bracebridge, December 14, 1913, Mr. Boyer got an early start in the family business, launched in 1919 by his father, who formed the Muskoka Publishing Company to publish the Muskoka Herald. In 1933 he was appointed editor, and except for three years during World War II, when he served with the Royal Canadian Ordinance Corps, he has continued in that capacity.

The Herald bought out its competitor, the Gazette, in 1954, and the name of the newspaper was changed to the Bracebridge Herald-Gazette. Mr. Boyer's father and his brother, Wilson, are also active in the publishing company.

Hydro's new Second Vice-Chairman is a Rotarian, a Scottish-Rite Mason, and a member of the Independent Order of Odd Fellows and the Canadian Legion. Married, he is the father of three children, one son and two daughters.

Georgetown and Mimico Mark 50 Years of Hydro

Month by month, more Ontario municipalities are marking their first half century of Hydro service, and when Georgetown and Mimico joined the growing ranks recently, Ontario Hydro chairman W. Ross Strike took advantage of the occasion to drop in at the utilities' offices and to congratulate personally the individual members of their staffs.

He pointed out that "a fourth dimension" had been added to utility operations in Ontario-load



Meeting the staff at Mimico Public Utilities Commission, Ontario Hydro Chairman W. Ross Strike enjoys chat with, left to right, Bruce Michie, secretary-treasurer, Mrs. Viola Gallant, seated, Mrs. June Ferguson and P.U.C. Chairman Amos Waites.



On visit to Georgetown Hydro celebrating 50th anniversary of Hydro power, Chairman W. Ross Strike congratulates E. W. Binkley, local Hydro chairman. They are flanked by Mayor W. D. Sargent, left, and J. T. Armstrong, commissioner.

building. He said that every staff member could contribute a great deal to the cause of Hydro by encouraging customers to use more electrical energy.

At Mimico, the Hydro Chairman paid special tribute to commissioners Amos Waites and James Edmond, each with 22 years service, for their splendid municipal records. Mr. Waites had previously served on the town council for 18 years, and had been mayor for 10 years of that time.

On his visit to Georgetown, Mr. Strike made a number of historical references pertinent to the district which had been the site of one of the world's first practical applications of "long distance" power transmission—a two-mile-long transmission line built by a local businessman, in 1888, to serve his paper mill. In addressing the staff, he stated that Georgetown Hydro had a remarkable record, of which every employee could be proud.

Sarnia Hydro Veteran J. C. Barr Dies at 86

Former Sarnia Mayor James C. Barr, 86, prominent sportsman and veteran Hydro commissioner, died recently at his home. He was serving his 19th year on the Hydro commission, during which time he had been chairman three times. (Please turn page) Mr. Barr was first elected mayor in 1925, and he was re-elected to that office in 1932. He served on the Board of Parks Management from 1933 until its amalgamation with Sarnia Recreation Committee in 1954.

Among the survivors are his wife, the former Alma Daisy Mavity, and a daughter, Mrs. Maurice Chilton.

Ontario E.H.A. Sets the Pattern



Future instructors in electric heating attended a weeklong workshop in Ontario Hydro's Conference and Development Centre, Niagara Falls, recently to study effective methods of presenting course material. The workshop was conducted by the Electric Heating Association of Ontario, and training was provided by Hydro's personnel development services department. The 38 sales personnel from Hydro's regional and area offices, and from municipal electrical utilities, who attended the workshop will assume responsibility in their own areas for basic training in electric heating for electrical contractors.

Delegates from other provinces who also attended the workshop are shown talking over the day's lesson with Jack Riseborough, Oshawa Public Utilities Commission. From left: Gillies Poirer, Southern Canada Power; George Rinehart, New Brunswick Power Commission; Jack Riseborough; Don Flemming, Nova Scotia Power; Harry Roberts, Southern Canada Power; and Sandy Pellam of Nova Scotia.

MUNICIPAL BRIEFS

North York Hydro has shelved its proposed plan to make underground wiring compulsory in new subdivisions—at least for the time being. Councillors voted against the suggestion at a recent meeting where Abraham Green, representing the Urban Development Institute, said it would put too heavy a burden on subdividers.

Kitchener P.U.C. expects to realize an estimated \$400 per month additional revenue as the result of a recent check by meter readers acting as inspectors. Among the findings—some 200 home owners who had converted their flat rate water heaters to faster recovery units without notifying Hydro; four customers

who had connected their oil burners into the flat-rate circuit; and five who had switched to gas water heating and were still paying for the Hydro service they were no longer receiving. A similar check of industrial and commercial customers is now being carried out.

Peterborough Utilities Commission will supply an industrial customer on an off-peak basis of .5 cents per kilowatt-hour, subject to a prompt payment discount of 10 per cent, if the company proceeds with its plan to install a new automatic electric boiler to supplement its present oil-fired equipment. The boiler would be separately metered and time-clock controlled to operate only during Ontario Hydro's stipulated "valley" hours.

Sarnia Hydro Chairman John T. Barnes was recently initiated into the Grand Valley American Indian Lodge at Ada, Michigan. Mr. Barnes, an honorary chief of the Sarnia Chippewas, was given the Fire Rites, and his voice will be second only to the chief's in matters pertaining to the administration of Indian affairs.

George E. Gathercole, Ontario Hydro's First Vice-Chairman, was a recent guest speaker at a meeting of the St. Thomas Kiwanis Club. "Every time I come back to Canada," he said, "I am impressed with our possibilities, our potentials and our extraordinarily bright prospects. We have resources and skills. The question is, are we going to do the job, or is someone else?" He was introduced by O.M.E.A. President Percy Locke and thanked by J. W. Peart, retired general manager of the P.U.C.

Ontario Hydro expects to realize savings in the order of \$200,000 per annum by billing municipal utilities on the first working day of the month with payments due on the 15th rather than under the present billing method where bills are rendered throughout the month as load charts are obtained and examined. The savings will accrue because of additional interest that will be obtained by an earlier return of revenue to the Commission. A large majority of the utilities have indicated acceptance of this plan providing suitable notice is given to enable the utility to adjust its own financing and billing to have the money available earlier in the month. The utilities are being given approximately 6 months' notice, with the plan going into effect June 1, 1963.

Tavistock P.U.C. has joined those utilities sponsoring a Christmas lighting and outside decoration contest. Judging will be based primarily on originality, and four prizes of \$25, \$15, \$10 and \$5 will be offered. The contest was sparked by the increasing interest in outside decoration shown by townfolk in recent years.

Delinquent customers of Stratford P.U.C. will pay up to \$10 for service reinstallation if they are continually lax in their payments. It was decided to retain the present \$10 residential customer deposit. The money, plus interest, is refunded after two years of residency.

Activity in the field of residential underground has led the Canadian Electrical Association to compile requirements for pad mounted transformers, which has been forwarded to the Canadian Electrical Manufacturers' Association as an aid in the standardization of such equipment.

Kingston P.U.C. is switching to outdoor meters in a new subdivision as a concession to the changing times. Because more and more married couples are going out to work, utility meter readers are finding it increasingly difficult to gain access to homes.

Oshawa P.U.C. plans to inaugurate a 25-Year Club. Fifteen employees are presently eligible for membership.

Sudbury Hydro is considering a reduction in rates on its flat rate rental water heater units as the result of their widespread acceptance. The reduction would be about 30 cents a month, per tank, and about 4,000 would be affected. In other business transacted at a recent commission meeting, co-operation with Ontario Hydro and the Sudbury Star in the Christmas Sparkle outside decoration contest was confirmed, and it was agreed to promote the "Do it Now—Why Wait till Spring campaign in conjunction with regular advertising.

Village of Belmont, now supplied through Ontario Hydro's London R.O.A., is planning to purchase the distribution system. The Commission estimates the sale price, as of July 1, 1963, at \$48,262.

Waterloo Hydro is considering construction of a \$150,000 office and service centre on land owned by the P.U.C. on Weber Street North. Other utilities with new office plans include Collingwood and Mitchell. Chapleau and Harrow Hydro Electric Commissions have recently moved into new quarters.

A three-day conference on distribution system planning, designed to maintain and improve the high standard of electric service by Canadian utilities to more than 51/4 million customers from Newfoundland to British Columbia, has recently been concluded in Montreal. Held under the auspices of the Canadian Electrical Association, the objective of the conference was to study at a national level the many problems encountered in the distribution of electricity from the point of view of techniques and equipment under widely varying conditions in all parts of Canada. Conference chairman was Marino Fraresso, Ontario Hydro's transmission and distribution engineer.

Personalities in the news include Mrs. Lillian Walker who was chosen Business Woman of the Week by the Renfrew Chapter of The Canadian Federation of Business and Professional Women's Clubs. She joined Renfrew Hydro in 1945 as an accountant, and is now secretary-treasurer. Archie Bell has retired after 35 years' service with Port Arthur P.U.C. He started as a groundman in 1927, and was with the service department in later years. Lorne Oliver is serving a three-month qualifying period as secretary-manager of Nipigon Township Hydro. The position was formerly held by Bill Wade. Ridson (Robert) Parkinson, a former warden of Peel County,

and twice reeve of Port Credit, died recently. Mr. Parkinson became the first employee of the Hydro Committee of Toronto Township, in 1913, and he was superintendent of Toronto Township Hydro for many years prior to his retirement in 1948.

Exeter P.U.C. Wins Safety Awards



Exeter Public Utilities Commissioner W. G. Cochrane pointed out that it took the harmony of the entire staff to prevent accidents when he presented one of two safety awards to the staff recently. It was the second consecutive year they had been awarded the Electrical Utilities Safety Association plaque and three times in a row for the American Water Works Association honor. Mayor Eldrid Simmons and P.U.C. Chairman R. E. Pooley assisted in the presentation.

Members of the staff who shared the awards, left to right, back row: Hugh Davis (manager), Ed Coombes, Bob Pooley, Mel Keating, Harold Wurm and Vern Postill. Seated are: Mrs. Wayne Fahner, Dorothy Davis and Marilyn Jory.

District 4 O.M.E.A. Votes To Double Promotion Budget



Committee Chairman E. B. Higgins

Audience impressions totalling 72,000,000 at a cost of a fraction of a cent each, is the noteworthy achievement of the Advertising and Load Building Committee of District 4, o.m.e.a. This unique district organization was set up to meet the special problems of Ontario's largest consumer market, which can be very effectively covered by a rela-

tively small number of advertising media.

The undertaking, supported by 25 of the 32 municipal utilities within the district, includes special promotions, newspaper, radio and TV advertising, National Home Show displays and the Ontario Public Speaking Contests for elementary and secondary schools.

To exploit the various markets more effectively, the committee established zone load building committees early in 1962. These cover the central, eastern, western, and northern sections of the district,

with a special committee embracing those utilities experiencing a substantial land development program in their communities.

Major accomplishments during the first eight months of the year which can be credited in large part to the program of the committee were completion of 439 Medallion homes, installation of 12,058 approved electric water heaters, and the addition of 10,322 kilowatts of new electric heating and airconditioning load.

To this must be added committee sponsored courses in salesmanship, electric heating, illumination, service

and maintenance.

The success of the program was underlined when delegates to the recent District 4, o.m.e.a. annual meeting voted to increase co-operative municipal appropriations from \$50,000 to \$100,000 for 1963, with the provision that at least half of the total amount be used for water-heater promotion.

New Terrace Bay Hydro Office



Fourteen months after Ontario Hydro Chairman W. Ross Strike laid the cornerstone for a new Hydro building in Terrace Bay, ceremonies were held marking the official opening. I. C. Ingimundson, manager of Ontario Hydro's Northwestern Region, remarked on the occasion that Terrace Bay was ahead of any other Ontario municipality from the standpoint of electrical living, having the highest per capita consumption in the province. Special guests included Hon. George Wardrope, Minister of Mines.

John Ferrier, who was Terrace Bay reeve when plans for the new Hydro building were formulated, is shown cutting the ribbon, with the present Reeve J. P. Heenan, looking on.

Hydro Awards Scholarships To 12 Ontario Students

Twelve scholarships totalling \$3,300 have been awarded by Ontario Hydro to students in Ontario universities, colleges and technical institutes for scholastic achievement in the 1961-62 academic year.

Initiated in 1952, Hydro's scholarship program is intended to assist and encourage engineering science students and to promote enrolment in engineering courses related to Ontario Hydro's operations.

Three University of Toronto students won \$300 scholarships. They were: G. E. McMichael, Goderich, first year engineering physics; V. I. Johannes, Port Arthur, second year mechanical engineering; and I. C. Thompson, Toronto, third year civil engineering.

Awards of \$300 each were also presented to the following: at the University of Western Ontario-R. E. McPhail, Toronto, first year engineering science; C. E. Kohn, Sarnia, second year engineering science; and D. J. Fader, Dorchester, third year engineering science; at Queen's University-G. S. Lacy, Rexdale, first year engineering; H. A. Briggs, Ottawa, second year electrical engineering; and H. Hesse, Toronto, third year physics; at the Lakehead College of Arts, Science and Technology, Port Arthur-C. Frederickson, Fort William, applied science.

A \$200 bursary was also awarded to C. Comello of Toronto, who is taking mechanical and metallurgical technology at Ryerson Institute of Technology, and a \$100 scholarship was awarded to Cadet Section Commander B. W. Bainbridge of Noranda, Quebec, fourth year electrical engineering student at the Royal

Military College, Kingston.

G.H. Fuller Announces Retirement



A prominent Windsor businessman and one of the best known public utility figures in the province, Gordon H. Fuller, has announced he will retire from public life at the end of this year. A past president of the Ontario Municipal Electric Association and a member of the Windsor Utilities Commis-

sion for the past 21 years, Mr. Fuller said health was a consideration in his retirement.

This year marked his seventh term as chairman of the Windsor Utilities Commission and the sixth time he has been president of District 8 O.M.E.A. He was elected to the presidency of the parent organization in 1956.

Prior to holding office on the utilities commission, Mr. Fuller served on the Windsor Board of Education from 1929 to 1935, being chairman in 1934.

Prominent in athletics, Mr. Fuller managed or coached 16 senior Ontario championship teams in baseball, softball and basketball. He coached the Canadian Olympic basketball team in Berlin, Germany, in 1936, which lost out to the United States in the final game for the world championship.

Mr. Fuller is a past president of the Windsor Optimist Club and a member of the Mic Mac Club, the Windsor Sportsmen's Association, the Windsor Chamber of Commerce, the Windsor Builders' and Contractors' Exchange, The Moramos Shrine Club and St. Andrew's Presbyterian Church.

Electronic Gift Selector

Have a tough time picking out a gift for Uncle Jim or Aunt Isobel this year? Shoppers in Simpson's department store in downtown Toronto were able to consult an I.B.M. gift selector. By feeding Aunt Isobel's vital statistics into the machine, a printed list of appropriate gifts is returned in the twinkling of an eye.

OFF THE WIRES



Apropos of the item in these columns, in October, about the Hydro manager who found that the time spent by female staff in the washroom could be drastically reduced by exposing the mirrors to the stark reality of intense fluorescent lighting, we were taken to task by a *Guelph Guardian* writer who said, in part, that "the Hydro manager's heart is as cruel as the harshest of harsh lights." He hoped, though, that the story was "Apocryphal."

After a quick huddle with Noah Webster we agree that it was "of doubtful authenticity"—sort of. The truth is that the lights were installed very innocently as part of a redecorating scheme—but the result of the increased footcandles was exactly as described.

On the same theme, the *Peterborough Examiner* recalled another manager who was faced by a similar problem but, in this case, the offenders were men. His solution was to reduce the lighting to the point where READING was impossible. His workers then spent less time in the washroom.

"All of which goes to show," concluded the *Examiner*, "that women like to be left their illusions and men do not like to be left in the dark."

Of the two expedients, we favor the former in the interests of load building.

This is it. Last month we bemoaned the arrival of the electronic computer for editing manuscript. Hard on the heels of this electronic editor comes news of Boeing's Computer Graphics—a machine capable of producing drawing at less cost than if the same drawings were done by an artist or draftsman.

And so the artist joins the editor as a victim of electronics and automation. But where is the insidious process going to stop? Surely there is no reason why a sick man couldn't feed the

computer with data relative to his symptoms and have the prescribed medicine compounded in an automatic blender? And does it not follow that a man in a hassle with the law could work out his best defence on the advice of an I.B.M. machine?

Ontario motorists have become very seat-belt-conscious in the last few years, and it is unfortunate that so much publicity was given the statement by a Canadian Standards Association spokesman to the effect that many Canadianmade belts did not stand up under C.S.A. tests. As the Canadian Highway Safety Council points out, some of the belts failed because their color was not fast, while others, although they failed the 4,000-pound force test, still withstood a force considerably greater than they might ever be required to meet.

In a recent statement on the subject, Ontario Transport Minister James Auld said that, in the near future, regulations would be enacted which would prohibit the sale of any seat belt that did not meet the standard recommended by the C.S.A. or the Society of Automotive Engineers, and did not bear a stamp indicating compliance with these standards. He said a special committee on seat belts had found that the standards of both the C.S.A. and S.A.E. were adequate.

A motorist would be deluding himself if he failed to use seat belts on the grounds that they might not be reliable.

And on the subject of motoring, a study of the changes in the demerit point system would seem like time well spent. How many Ontario drivers are aware that two points can be assessed for failing to lower headlight beams, overcrowding the driver's seat, or

making a U-turn in a prohibited area?

There are a great many more elaborate and artistic outdoor decorations designed to convey the same seasonal message, but we wonder how many strike the viewer with more force than the one emblazoned in lights on the surge tank of Ontario Hydro's Aguasabon Generating Station near Terrace Bay. The word "Noel" topped by the symbolic star dominates the bleak winter coast of Lake Superior for miles, and to the traveller on one of the most rugged and lonely sections of the Trans-Canada Highway, or to the passenger in the snug dome car of a crack transcontinental, the simple beacon carries the message of Christmas with infinitely more impact than much more sophisticated presentation in urban environments.

If there is a moral here, it has to do with the importance of the setting in relation to the gem.





NINETEEN HUNDRED AND SIXTY-THREE

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